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Liquid Densities of Oxygen, Nitrogen, Argon, and Parahydrogen

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Liquid Densities of Oxygen, Nitrogen, Argon, and Parahydrogen

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LIQUID DENSITIES OF OXYGEN, NITROGEN, ARGON, AND PARAHYDROGEN

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Tables of pressure, volume, density and temperature for the saturated liquid and for compressed liquid states from the triple point to the critical point, of oxygen, nitrogen, argon, and parahydrogen are presented. The table entries of temperature are in Kelvin and Rankine, table entries in pressure are in atmospheres and psia. Volumes or densities are given in several different units, and density ratios or "volume correction factors" are tabulated for each entry. Estimates of the uncertainty for the tabulated data are given. The tables and graphs were prepared in the style and in the units preferred by users. They are intended as source for both technician and engineer.

Key Words: Argon; compressed liquid; density; graphs; liquid; nitrogen; oxygen; parahydrogen; pressure; saturated liquid; tables; temperature; uncertainties; volume; volume correction factor.

1. INTRODUCTION

In this report, standard density data for the saturated liquid and for compressed liquid states of four commercially important gases are presented. This report was prepared to support the Tentative Code for Cryogenic Liquid - Measuring Devices as presented at the 57th National Conference on Weights and Measures. Earlier versions were prepared at the specific request of users such as the Compressed Gas Association, the Department of the Air Force, and the State of California, who must either pay for the product delivered, or supervise delivery to customers. These agencies have experienced a certain amount of non-uniformity in costs and billings that arise because different suppliers use slightly different methods or values for the physical properties of these gases.

The report is a logical extension of earlier efforts. The first effort was pamphlet P-6, "Standard Density Data Atmospheric Gases and Hydrogen," by the Compressed Gas Association (CGA, 1965). In this pamphlet, values of pressure, temperature, and density for the Normal Boiling Point (NBP) and Standard Temperature and Pressure (STP) were presented.

The second effort was NBS Technical Note 361, "Saturated Liquid Densities of Oxygen, Nitrogen, Argon, and Parahydrogen" (Roder, et al. 1968). In addition to the two state points NBP and STP, this document included the definition of the saturated liquid curve. The sources selected were the best available at that time. In particular the compilations of oxygen, argon, and parahydrogen selected, each representing at least two man years of effort, were not available to the CGA in 1965.

The present effort includes all of the data presented previously in tables and graphs. It also provides the extension to the compressed liquid states which was forecast in Technical Note 361. In addition, the source selected for oxygen is based on a large body of new and highly accurate data, only a small portion of which was available in 1968. Numerical values differ from earlier selections by no more than 0.16%. We hope that the values presented here will serve as "agreed-on" values for some time to come.

The advantages of the present document are:

1. Each of the compilations selected presents a consistent set of values for the saturation boundary as well as for compressed liquid states. The references are to a single source for each fluid.
2. All available data, including specific heat data, velocities of sound and in particular the correlation of the single phase PVT data with the saturation boundaries and the vapor pressure curve, have been considered in establishing the equation of state.
3. The equations of state, in the form of computer programs, allow determination of values, both at liquid temperatures and at room temperatures.
4. The values presented here for oxygen and parahydrogen are identical to those prepared for and used by a major customer, NASA.

Because NBS has been called upon to make a selection of values, a considerable portion of the text is devoted to discussion and an estimate of errors. This should satisfy the scholar and scientist. Because the use to which the document will be put is eminently practical, the tables and graphs are presented primarily in practical units. This, and the section on pitfalls or limitations of these tables, should thus be useful to the engineer and the technician.

2. DESCRIPTION OF TABLES AND GRAPHS

To understand the properties that are presented in the tables and graphs, it is helpful to recall one of the "standard" phase diagrams. Try to recollect the presentation of isotherms in pressure-volume (P-V) coordinates as given in figure 1. You may recall the rectangular hyperbolas of $PV = \text{constant}$ of the ideal gas, and the critical isotherm first presented in a discussion of the Van der Waals equation of state. This report concerns the compressed liquid region and the equilibrium boundary between the single phase compressed

liquid region and the two phase liquid-gas region. The compressed liquid region is shown dotted while the boundary is emphasized in figure 1. The boundary extends from the triple point to the critical point.*

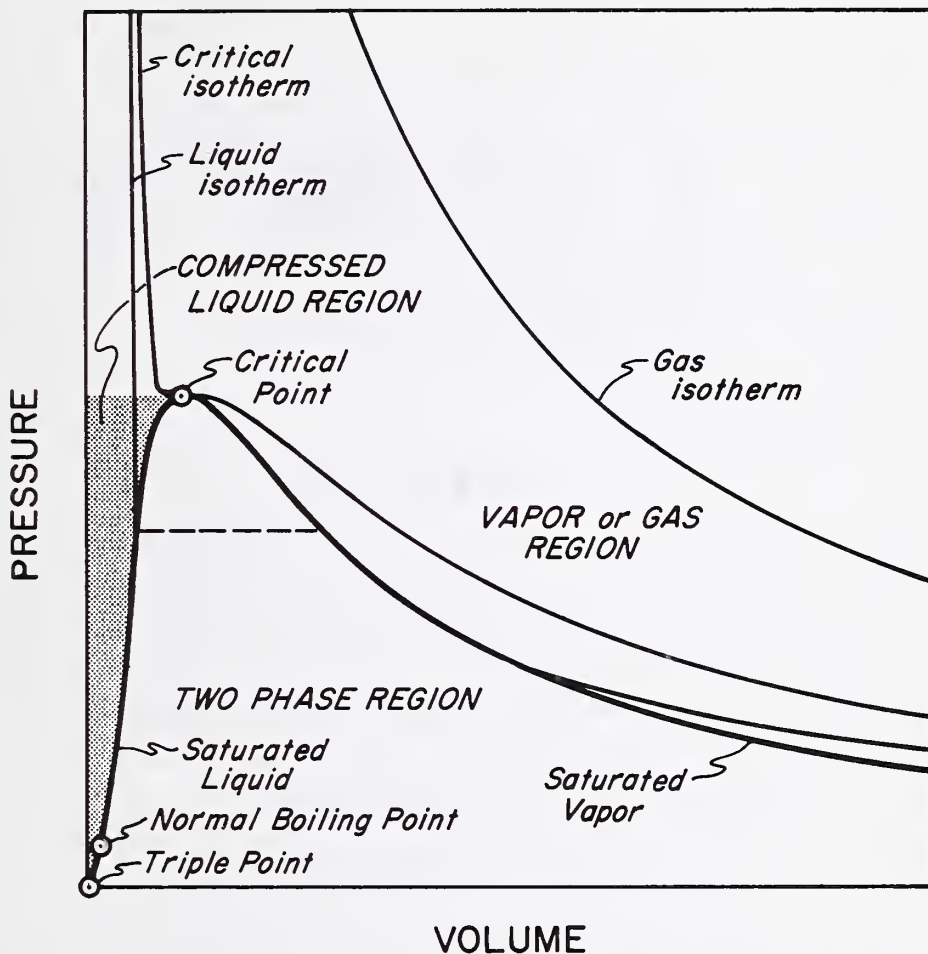


Figure 1. Generalized Phase Diagram; Pressure vs. Volume

A second way to show the region of interest is in a pressure-temperature (P-T) phase diagram. In figure 2 we recognize the vapor pressure curve, the melting line, and we recall that lines of constant volume or density are very nearly straight lines. The compressed liquid region is again shown dotted. The equilibrium boundary of concern coincides with the vapor pressure curve.

* Strictly speaking, in this phase diagram the NBP and the triple point are lines extending from liquid to vapor side at the pressure indicated.

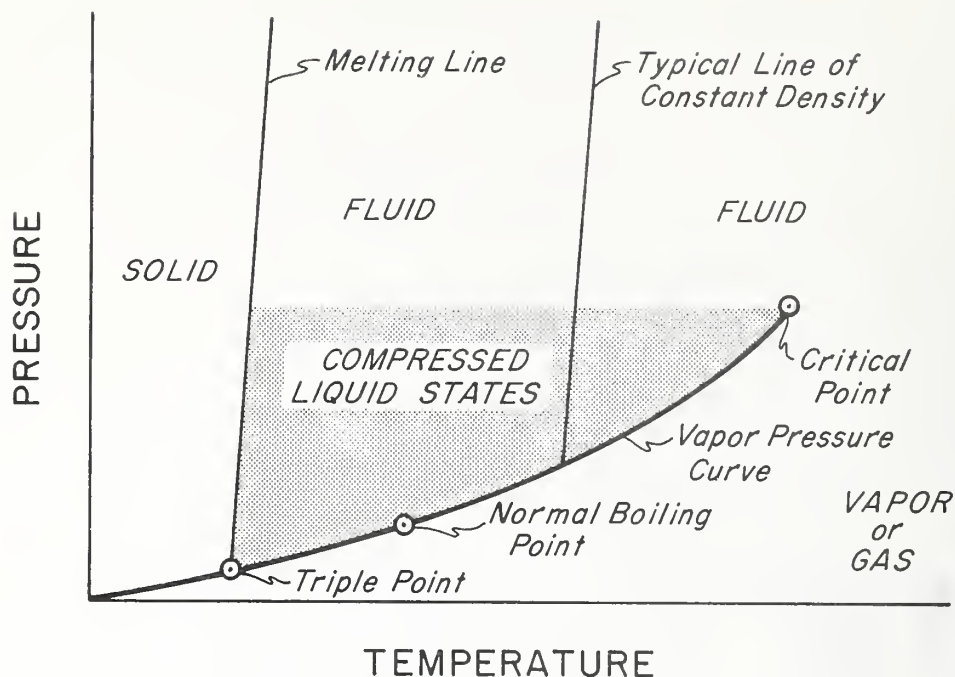


Figure 2. Generalized Phase Diagram; Pressure vs. Temperature

For each gas the various properties are presented in a series of tables and graphs as follows:

- A table giving the densities at 1 atmosphere near room temperature
- A table giving uncertainties in the data
- A table giving property values for the saturated liquid
- A graph showing specific volume vs. pressure for the saturated liquid
- A graph showing the liquid volume correction factor for the saturated liquid
- A table giving property values for compressed liquid, and
- A graph showing the liquid volume correction factor for compressed liquid.

The various tables and graphs are described in more detail below.

The first table for each fluid presents values of pressure, temperature, and density near room temperature. One atmosphere is usually accepted as "standard" pressure; however, the values of temperature chosen as "standard" or "normal" vary. We present, therefore, values at 0°C , a point which is usually called "Standard Temperature and Pressure" (STP), and at 68°F as well as 70°F , both of which are referred to as "Normal Temperature and Pressure" (NTP).

The second table for each fluid presents values for the uncertainties in the data. The uncertainties at low temperatures include both the error in the experimental values and the contribution to the error by using an analytical function to represent the experimental values.

Errors for values near room temperature are seen to be much smaller because PVT measurements near room temperature can be made to great accuracy and a better fit to the equation of state can be made.

The third table presents values of increasing pressures and corresponding temperatures along the saturated liquid boundary. These two variables define the vapor pressure curve. The table contains in ascending order even values of pressure in both atmospheres and psia and even values of temperature in both K and R. Other columns contain entries in density, volume, and density ratios. There are two columns of density ratios. The first column is labelled "Liquid Volume Correction Factor" and will be used as such. Physically it is the ratio of the actual density as compared to the density at the Normal Boiling Point (NBP). For examples of use see case 1, the alternate computation of case 3, case 4, and case 5 on pages 10 and 11. The second column is labelled "NTP (70°F) Volume Correction Factor." Physically this ratio is also a ratio of densities, namely the ratio of the actual density of the liquid as compared to the density at NTP. For this column, NTP is selected to be 70°F and 1 atmosphere. The units of the two densities are lb/gal and lb/ft³. They are chosen this way so that the value yields directly the equivalent number of cubic feet of gas at NTP (70°F) per measured gallon of liquid. For an example of use, see case 3 on page 10. Entries in pressure are closely spaced so that interpolation between values should not be required. For parahydrogen, the increment in pressure is 1 psia from 1 to 150 psia. For the other fluids the increments are 2 psia between 2 and 200 psia and 5 psia between 205 and 400 psia. The tables include entries for the Triple Point, the Normal Boiling Point, and the Critical Point, and these points are set off by double spacing in the table. Conversion of units are given in the appendix. Please note that the number of significant figures presented in the tables is not justified on the basis of accuracy, but are given to maintain internal consistency.

The first graph for each fluid is a plot of specific volume vs. pressure along the saturated liquid boundary. The graph can be understood quite easily if you imagine figure 1 rotated about the 45° axis, i.e., the coordinates interchanged. The very practical reason behind this presentation is that the variable most easily and often measured on tanks, etc. is the pressure; thus it is sensible to have the pressure displayed as the independent variable. Because storage and transport tanks are not usually subjected to pressures in excess of 150 psia, this is the limit chosen for the graphs.

The second graph is somewhat more specialized. It gives the Liquid Volume Correction Factor, or density ratio, for a limited pressure range from slightly below atmospheric pressure to about 50 psia (150 psia for parahydrogen). Transfers of liquid usually take place at pressure conditions different from the Normal Boiling Point (NBP), yet the quantity of liquid transferred is desired in figures equivalent to the amount at the NBP. We assume that either a pressure or a temperature indicator may be used to determine the condition of transfer.

The graph is based on a pressure-temperature plot of the saturated liquid. It is a limited range of figure 2 rotated about the 45° axis, i.e., the coordinates interchanged. The temperature scale and the Liquid Volume Correction Factor scale are arranged in nomograph style for convenience of use. Also, an auxiliary scale for psig has been added at the bottom of the graph, and an extra auxiliary scale at the end of the report. If the local barometer is different from standard sea level, either psig scale can be cut out and positioned for the appropriate altitude.

The fourth table presents density and density ratios for the compressed liquid states. The horizontal index of this table is pressure given for selected values in even psia. An additional line shows the psia equivalent in atmospheres. The primary vertical index is temperature given in Kelvin. Auxiliary entries give the Kelvin equivalent in Rankine, and the vapor pressure corresponding to this temperature in psia. Entries in the table proper are:

- a.) a density ratio, the Liquid Volume Correction Factor described earlier. This ratio, the density divided by the Normal Boiling Point density, is dimensionless. For an example of use see case 6 on page 11.
- b.) a density ratio, the "NTP (70°F) Volume Correction Factor." This density ratio, the same as given in the table for the saturated liquid, is the ratio of the actual density as compared to the density at NTP. For this entry NTP is selected to be 70°F and 1 atmosphere. As before, the units of the densities are lb/gal and lb/ft³ so that the NTP (70°F) Volume Correction Factor yields the equivalent number of cubic feet of gas at NTP (70°F) per measured gallon of liquid in one step. For an example of use see case 8 on page 11.
- c.) the density in lb/gal. For an example of use see case 7 on page 11.

The third graph displays the Liquid Volume Correction Factor as a function of pressure, that is, it is a plot of the first entry of the fourth table. The plot is very similar to the recommendation made in the first version of this report (page 9, Tech. Note 361). Lines of constant temperature, isotherms, shown on this plot turn out to be nearly straight lines. This corresponds to the lines of constant volume in a pressure-temperature plot being nearly straight lines as noted earlier in figure 2. For examples of use see case 6 on page 11.

3. DISCUSSION

The nature of progress in cryogenics is such that today's "best" value may be superseded tomorrow. In the initial effort, Pamphlet P-6 of the Compressed Gas Association (1965), only values for the NBP and values at NTP were presented. The next report included values for the saturated liquid boundary. The present report includes the PVT values in the compressed fluid states because we know that in many applications the fluid entering pump intakes is subcooled to prevent cavitation.

We have selected the following sources: Weber (1970) for oxygen; Strobridge (1962) for nitrogen; Gosman, et al. (1969) for argon; and Roder, et al. (1965) for parahydrogen. In addition, we use Hilsenrath, et al. (1955) to establish the NTP and STP values for parahydrogen. The sources selected differ only slightly from earlier selections. The oxygen reference in particular has become available only in recent years. The most compelling reason for selecting these compilations as sources is that we require consistent values for the saturated liquid and the compressed liquid states. In our experience the "best" set of values is obtained when in addition to PVT and vapor pressure data other experimental data such as measurements of the liquid specific heats, the heats of vaporization, or the velocity of sound in the liquid are included in the establishment of the basic PVT surface.

One advantage in selecting these sources is that industry and one major user, NASA, will now be using consistent data. The data in the NASA references for oxygen and hydrogen [NBS Tech. Note 384, McCarty and Weber (1971), and NBS Tech. Note 617, McCarty and Weber (1972)] are taken from Weber (1970) and Roder, et al. (1965). One other advantage arises when we select these compilations as sources: except for hydrogen, we can get the values at or near room temperature, i.e., the STP and NTP values directly from the equation of state, interpolated to the accuracy of the original data.

The last point requires a bit more discussion because it ties in with the uncertainties in the values presented at or near room temperatures. In the present report we have used a high order interpolation - the equation of state - to get STP and NTP values. We are justified in using a high order interpolation because the various experimenters went to considerable lengths to get the most accurate PVT values at conditions close to room temperature. According to Cragoe (1941), relative measurements of pressure and volume near room temperature can be made to a few parts per million, and the scatter between PVT values of different observers can to a large extent be explained by the use of different fundamental constants. In tables 2, 6, 10, and 14 we indicate an uncertainty of 0.01% as the uncertainty in molar volume at STP. The molar volume at STP is the familiar 22.4 liters per mole encountered in elementary texts. The uncertainty is based on a consideration of the ice point temperature, T_0 , rather than on a comparison of different experiments. The fundamental constant T_0 is now defined to be 273.15 K, but the average over a large number of determinations of different investigators for different gases was 273.165 (Beattie, 1941). We

have taken the difference between these two numbers as an indication of the true uncertainty in the molar volumes. Even if the values of different authors are compared directly, the differences are not much larger than 0.01%. Take for example hydrogen, the molar volume is 22428.5 cm³/mole according to Woolley, et al. (1948), while it is 22433.6 cm³/mole according to Michels, et al. (1959). The difference is 0.022%. In contrast to this there is no difference between recent measurements on oxygen by Weber (1970) and those of Michels, et al. (1954) if one uses identical values for the gas constant, R , and T_0 .

Another word on the uncertainties in tables 2, 6, 10, and 14: The uncertainties are of course ultimately based upon the accuracy of the various experiments. We take them from the author's estimates, from the statistics of the coefficients of the equation of state, and from the differences between practical temperature scales and the absolute thermodynamic one. We present uncertainties for all three variables, pressure, volume, and temperature. This allows the user to enter the tables with any combination of variables and obtain the uncertainty in the remaining one. For example, in obtaining entries for the other tables, we have assumed either temperature and density or temperature and pressure to be exact. Thus, only uncertainties in pressure in the first case and density in the second case are of concern in determining the number of digits presented in each table.

From the first effort to the present one, changes in property values have been minimal. The actual changes are best described in terms of density. The room temperature values presented in this report for NTP of oxygen and argon differ by about 0.02% from those given by the CGA in 1965, while those for nitrogen and parahydrogen are unchanged. On the other hand, the densities of the saturated liquid at the NBP have changed from earlier values by 0.16% for oxygen and 0.1% for nitrogen. They are virtually unchanged for argon and parahydrogen.

4. LIMITATIONS

In practice, a number of problems are encountered that introduce errors beyond what we might expect from the uncertainties inherent in the data. A few of the practical problems are indicated below.

Instrumentation. Pressure and temperature measuring devices used in custody transfer situations will rarely be capable of the best state of the art measurements, i.e., those that are possible under controlled laboratory conditions. Thus, in most cases the error in instrumentation will be much larger than the uncertainties given for the property tables.

Equilibrium vs. Non-equilibrium Properties. The informed engineer recognizes that the processes of transfer, transport, pressurizing, siphoning, and stratification in storage tanks are all non-equilibrium events. The properties presented in this report are equilibrium properties.

Subcooling. We have indicated that pump intakes, or, for that matter, flow meter intakes, are usually subcooled to prevent cavitation. It is important to recognize that the degree of subcooling, that is the pressure and temperature parameters, may change during liquid transfer.

Purity. The purity of the product will also play a role. The properties presented here are for the pure product made available under laboratory conditions. They may not be appropriate for certain purity grades of commercially available gases without some adjustment for the known impurities.

Significant Digits. The values presented in this report were obtained from various computer programs. We have in the past made these programs available to any user requesting them. However, different computers will return different results from the same programs; in particular, they will round differently. The user should be aware of the following: The accuracy of the data for liquid conditions is on the order of 0.1 to 0.3%, while the accuracy of the room temperature values is on the order of 0.01 to 0.02%. We have, therefore, printed no more than 5 digits anywhere. Please bear in mind that even the fourth digit is uncertain for most values, that is, the digits printed are only to maintain internal consistency of the tables and to allow you to check out your computer programs. If occasionally pairs of values or reciprocals do not seem to correspond, then the fault can be traced to rounding errors.

5. THE USE OF TABLES AND GRAPHS

Examples of usage are included because they may be of value to individuals not skilled in the use of tables or graphs. We first mention the compensation for altitude. As an example, atmospheric pressure in Boulder, Colorado, is near 12 psia. If we had a pressure gage which measured pressure with respect to atmospheric pressure, i.e., a gage which reads psig and not psia, then the compensation has to be applied. We would cut out

either the extra auxiliary scales at the end of the report or the auxiliary scales at the bottom of figures 4, 7, 10, and 13 and paste them on graphs 4, 7, 10, and 13 over the main scale with the zero of the auxiliary scale lined up with the 12 on the primary scale.

When we use the tables and graphs to prepare billings, a number of combinations are possible. The ones likely to occur are discussed below.

5.1 Examples for Saturated Liquid Conditions

Case 1. Price given in terms of gallons at NBP, flowmeter registers 25 gallons, tank pressure reading 26 psia, fluid liquid nitrogen, price \$ 0.40 per gallon at NBP. We would go to figure 7 and enter with 26 psia on the primary scale to read out a value of 0.970 for the liquid volume correction factor. Alternately, we could use table 7 and obtain a value of 0.9697.

The billing computation is:

gallons $\times$ liquid volume correction factor $\times$ price

$$25 \text{ gal} \times 0.970 \times \$ 0.40/\text{gal} = \$ 9.70.$$

Case 2. Price given in terms of weight, flowmeter registers 25 gallons, tank pressure reading 26 psia, fluid liquid nitrogen, price \$ 0.06 per pound. We would go to the table 7 enter with 26 psia and find in the columns of density 6.5341 lb/gal.

The billing computation is:

gallons $\times$ actual density $\times$ price

$$25 \text{ gal} \times 6.5341 \text{ lb/gal} \times \$ 0.06/\text{lb} = \$ 9.80$$

Case 3. Price given in terms of cubic feet at NTP (70°F), flowmeter registers 25 gallons, tank pressure 26 psia, fluid liquid nitrogen, price \$ 4.32 per 1000 ft³ (NTP). We would go to table 7 and enter with 26 psia to read a value of 90.19 ft³/gal for the NTP (70°F) volume correction factor.

The billing computation is:

gallons $\times$ NTP (70°F) volume correction factor $\times$ price

$$25 \text{ gal} \times 90.19 \text{ ft}^3/\text{gal} \times \$ 4.32/1000 \text{ ft}^3 = \$ 9.74$$

Alternate Computation: Since the column labelled "NTP (70°F) Volume Correction Factor" is the combination of the liquid volume correction factor multiplied by the equivalent volume at NTP (70°F), we could have used figure 7 with a pressure of 26 psia to read a value of 0.970 for the liquid volume correction factor and table 5 to obtain the equivalent volume of 93.00₆ ft³/gal for a temperature of 70°F.

The billing calculation then becomes:

gallons $\times$ liquid volume correction factor $\times$ equivalent volume $\times$ price

$$25 \text{ gal} \times 0.970 \times 93.00_6 \text{ ft}^3/\text{gal} \times \$ 4.32/1000 \text{ ft}^3 = \$ 9.74.$$

Case 4. Price given in terms of Standard Cubic Feet (SCF) at STP 0°C, and our flowmeter is calibrated to register in cubic feet. Flowmeter registers 2158 ft³, tank pressure reading 26 psia, fluid liquid nitrogen, price \$ 4.66 per 1000 SCF. We will assume that the gearing ratio of the flowmeter is based on the volume change NBP to STP. If so, then the liquid volume correction factor still applies and we have to go to figure 7 (or table 7) as before to get a value of 0.970.

The billing computation is:

$$\begin{aligned} &\text{cubic feet} \times \text{liquid volume correction factor} \times \text{price} \\ &2158 \text{ ft}^3 \times 0.970 \times \$ 4.66/1000 \text{ SCF} \qquad = \$ 9.75. \end{aligned}$$

Case 5. Any of the above, except that we have a temperature sensor on our storage or transport tank instead of the pressure gage. The temperature reading is 148 R. We would go to figure 7 and use a straightedge to read across from the temperature scale at 148 R to the liquid volume correction factor scale to get a value of 0.972. The value obtained from table 7 for the liquid volume correction factor is 0.9717. The value obtained from table 7 for the corresponding value of density is 6.5477 lb/gal.

5.2 Examples for Compressed Liquid Conditions

For these conditions both a pressure gage and a temperature indicator must be available on the storage tank to indicate conditions during transfer of liquid.

Case 6. Price given in terms of gallons at NBP, flowmeter registers 25 gallons, tank pressure reading 200 psia, tank temperature reading 82 Kelvin (or 147.6 R). Fluid liquid nitrogen, price \$ 0.40 per gallon at NBP. We would go to table 8 and enter with 200 psia and 82 Kelvin to read out a value of 0.9771 for the liquid volume correction factor. Alternately, we could use figure 8 and obtain a value of 0.977.

The billing computation is:

$$\begin{aligned} &\text{gallons} \times \text{liquid volume correction factor} \times \text{price} \\ &25 \text{ gal} \times 0.9771 \times \$ 0.40/\text{gal} \qquad = \$ 9.77. \end{aligned}$$

Case 7. Price given in terms of weight, flowmeter registers 25 gallons, tank pressure reading 250 psia, tank temperature reading 84 Kelvin (or 151.2 R). Fluid liquid nitrogen, price \$ 0.06 per pound. We would go to table 8 and enter with 250 psia and 84 Kelvin to read out a value of 6.5127 lb/gal for the density.

The billing computation is:

gallons $\times$ actual density $\times$ price

$$25 \text{ gal} \times 6.5127 \text{ lb/gal} \times \$ 0.06/\text{lb} = \$ 9.77.$$

Case 8. Price given in terms of cubic feet at NTP (70°F), flowmeter registers 25

gallons, tank pressure reading 400 psia, tank temperature reading 88.2

Kelvin (158.8 R). Fluid liquid nitrogen, price \$ 4.32 per 1000 ft³ (NTP).

We would go to table 8 and enter with 400 psia and 88.2 Kelvin to read

out a value of 87.91 ft³/gal for the NTP (70°F) volume correction factor.

The billing computation is:

gallons $\times$ NTP (70°F) volume correction factor $\times$ price

$$25 \text{ gal} \times 87.91 \text{ ft}^3/\text{gal} \times \$ 4.32/1000 \text{ ft}^3 = \$ 9.49.$$

Case 9. (Requiring interpolation - otherwise similar to cases 6, 7, and 8 above).

Price given in terms of weight, flowmeter registers 25 gallons, tank

pressure reading 230 psia, tank temperature reading 85.55 K (153.99 R).

Fluid liquid nitrogen, price \$ 0.06 per pound.

Interpolation between 200 and 250 psia, and 85.5 and 85.6 K is required to obtain

the appropriate value of density in lb/gal. Entries are taken from table 8 to get

the following matrix of values which surround the desired value.

	200	230	250 psia
85.5 K	6.4436		6.4523
85.55 K			
85.6 K	6.4395		6.4482

A double linear interpolation is required to obtain the value desired. Such an interpolation can be done in either of two ways.

Horizontal, then vertical. Interpolated values are shown in ().

	200	230	250 psia
85.5 K	6.4436	(6.4488)	6.4523
85.55 K		(6.4468)	
85.6 K	6.4395	(6.4447)	6.4482

The second possibility is vertical, then horizontal. Interpolated values are shown in [].

	200	230	250 psia
85.5 K	6.4436		6.4523
85.55 K	[6.4415 ₅]	[6.4468]	[6.4502 ₅]
85.6 K	6.4395		6.4482

Either choice gives the same value, i.e., 6.4468 lb/gal for the density.

The billing computation is:

gallons $\times$ actual density $\times$ price

$$25 \text{ gal} \times 6.4468 \text{ lb/gal} \times \$ 0.06/\text{lb} = \$ 9.67.$$

6. OXYGEN

The data for oxygen tabulated here are based on the paper by Weber (1970). Additional, extensive tables of values based on this source were prepared by McCarty and Weber (1971) for NASA. Values for the saturated liquid were obtained by first solving the vapor pressure equation for either pressure or temperature, and then using the resulting P and T as input to Weber's programs to obtain the corresponding liquid density. Densities for the compressed liquid were obtained from Weber's programs directly using appropriate values of P and T as input.

Values near room temperature are given in table 1, uncertainties for the data in table 2, values for the saturated liquid are given in table 3, and values for the compressed liquid are shown in table 4.

Table 1

Density of Oxygen at 1 Atmosphere Near Room Temperature

Temperature	Density		
	gram-mole/cm ³	lb/ft ³	lb/gal
0 C	0.000044658	0.089209	0.011926
68 F	0.000041600	0.083101	0.011109
70 F	0.000041443	0.082786	0.011067
Temperature	Volume		
	cm ³ /gram-mole	ft ³ /lb	gal/lb
0 C	22392	11.210	83.853
68 F	24038	12.034	90.017
70 F	24130	12.079	90.360
Temperature	Density Ratios and Equivalent volumes		
	$\frac{\text{density at NBP}^*}{\text{density at the temperature indicated}}$		
	dimensionless	$\frac{\text{lb/gal}}{\text{lb/ft}^3} = \text{ft}^3/\text{gal}$	
0 C	798.47	106.74	
68 F	857.16	114.59	
70 F	860.42	115.02	

* 71.231 lb/ft³ or 9.5222 lb/gal

Densities at the NBP differ by 0.05% from CGA pamphlet P-6, and by 0.03% from the value given in the earlier version of Technical Note 361. The densities for the saturated liquid differ by a maximum of 0.16% from the earlier values at temperatures up to 150 K, that is, the new values are within the uncertainties previously specified. Above 150 K to the critical point the departures rise to several percent because better values for both critical density and critical temperature are now available. The present values are considered to be better because in addition to PVT data, experimental specific heats and dielectric constant measurements near the critical point were used to establish the PVT surface.

Table 2

Uncertainties in the Data for Oxygen

variable	uncertainty	range of temperature
temperature	0.05 K	below 90 K
	0.02%	between 90 and 154 K
	0.1%	near critical
	0.015 K	room temperature
volume	0.1%	between 54.353 and 60 K
	0.2%	between 65 and 150 K
	larger than 0.5%	between 150 K and critical
	0.01%	room temperature
pressure	0.1%	below 90 K
	0.02%	between 90 and 154 K
	0.1%	near critical
	0.01%	room temperature

The specific volume for the saturated liquid is plotted in figure 3. The liquid volume correction factor for the saturated liquid is shown in figure 4 and the liquid volume correction factor for the compressed liquid is plotted in figure 5.

TABLE 3

SATURATED LIQUID OXYGEN

PRESSURE			TEMPERATURE			DENSITY		VOLUME			DENSITY RATIO	
ATM	PSIA	KELVIN	RANKINE	GRAM-MOLE/ CM ³	LB/FT ³	LB/GAL	CM ³ / GRAM-MOLE	FT ³ /LB	GAL/LB	LIQ VOLUME CORRECTION FACTOR	NTP (70°F) VOLUME CORRECTION FACTOR*	
0.00150	0.022	54.351	97.83	0.040832	81.567	10.9039	24.491	0.012260	0.09171	1.1451	131.71	
0.00720	0.106	60.000	108.00	0.040054	80.012	10.6960	24.967	0.012498	0.09349	1.1233	129.20	
0.0229	0.337	65.000	117.00	0.039356	78.618	10.5097	25.409	0.012720	0.09515	1.1037	126.95	
0.0256	0.379	65.556	118.00	0.039278	78.462	10.4889	25.460	0.012745	0.09534	1.1015	126.70	
0.0283	0.416	66.000	118.80	0.039215	78.337	10.4722	25.500	0.012765	0.09549	1.0998	126.50	
0.0290	0.425	66.111	119.00	0.039200	78.306	10.4680	25.510	0.012770	0.09553	1.0993	126.45	
0.0324	0.477	66.667	120.00	0.039121	78.150	10.4471	25.562	0.012796	0.09572	1.0971	126.19	
0.0347	0.510	67.000	120.60	0.039074	78.056	10.4345	25.592	0.012811	0.09584	1.0958	126.04	
0.0362	0.533	67.222	121.00	0.039043	77.993	10.4261	25.613	0.012822	0.09591	1.0949	125.94	
0.0404	0.594	67.778	122.00	0.038964	77.836	10.4051	25.665	0.012848	0.09611	1.0927	125.69	
0.0422	0.620	68.000	122.40	0.038933	77.773	10.3967	25.685	0.012858	0.09618	1.0918	125.59	
0.0450	0.661	68.333	123.00	0.038886	77.679	10.3841	25.716	0.012874	0.09630	1.0905	125.43	
0.0500	0.735	68.889	124.00	0.038807	77.521	10.3631	25.769	0.012900	0.09650	1.0883	125.18	
0.0511	0.751	69.000	124.20	0.038791	77.490	10.3589	25.779	0.012905	0.09654	1.0879	125.13	
0.0555	0.815	69.444	125.00	0.038728	77.363	10.3420	25.821	0.012926	0.09669	1.0861	124.92	
0.0614	0.903	70.000	126.00	0.038649	77.205	10.3209	25.874	0.012952	0.09689	1.0839	124.67	
0.0679	0.998	70.556	127.00	0.038569	77.047	10.2997	25.927	0.012979	0.09709	1.0817	124.41	
0.0735	1.080	71.000	127.80	0.038506	76.920	10.2827	25.970	0.013000	0.09725	1.0799	124.21	
0.0750	1.102	71.111	128.00	0.038490	76.889	10.2785	25.981	0.013006	0.09729	1.0754	124.16	
0.0826	1.214	71.667	129.00	0.038411	76.730	10.2573	26.035	0.013033	0.09749	1.0772	123.90	
0.0875	1.285	72.000	129.60	0.038363	76.634	10.2445	26.067	0.013049	0.09761	1.0759	123.75	
0.0908	1.335	72.222	130.00	0.038331	76.570	10.2360	26.089	0.013060	0.09769	1.0750	123.64	
0.0938	1.466	72.778	131.00	0.038251	76.411	10.2147	26.143	0.013087	0.09790	1.0727	123.39	
0.104	1.522	73.000	131.40	0.038219	76.347	10.2061	26.165	0.013098	0.09798	1.0718	123.28	
0.109	1.608	73.333	132.00	0.038171	76.251	10.1933	26.198	0.013115	0.09810	1.0705	123.13	
0.120	1.760	73.889	133.00	0.038091	76.091	10.1719	26.253	0.013142	0.09831	1.0682	122.87	
0.122	1.792	74.000	133.20	0.038075	76.059	10.1676	26.264	0.013148	0.09835	1.0678	122.82	
0.131	1.925	74.444	134.00	0.038011	75.931	10.1505	26.308	0.013170	0.09852	1.0660	122.61	
0.136	2.030	74.686	134.44	0.037976	75.861	10.1411	26.333	0.013182	0.09861	1.0650	122.50	
0.143	2.101	75.000	135.00	0.037930	75.770	10.1290	26.364	0.013198	0.09873	1.0637	122.35	
0.156	2.291	75.556	136.00	0.037850	75.609	10.1075	26.420	0.013226	0.09894	1.0615	122.09	
0.167	2.452	76.000	136.80	0.037785	75.480	10.0902	26.466	0.013249	0.09911	1.0597	121.88	
0.170	2.494	76.111	137.00	0.037769	75.448	10.0859	26.477	0.013254	0.09915	1.0592	121.83	
0.184	2.711	76.667	138.00	0.037688	75.286	10.0643	26.534	0.013283	0.09936	1.0569	121.57	
0.194	2.849	77.000	138.60	0.037639	75.189	10.0513	26.568	0.013300	0.09949	1.0556	121.41	
0.200	2.944	77.222	139.00	0.037607	75.124	10.0426	26.591	0.013311	0.09958	1.0547	121.31	
0.217	3.192	77.778	140.00	0.037525	74.962	10.0209	26.649	0.013340	0.09979	1.0524	121.05	
0.224	3.296	78.000	140.40	0.037493	74.897	10.0122	26.672	0.013352	0.09988	1.0515	120.94	
0.235	3.458	78.333	141.00	0.037444	74.799	9.9992	26.707	0.013369	0.10001	1.0501	120.78	
0.254	3.740	78.889	142.00	0.037362	74.636	9.9774	26.765	0.013398	0.10023	1.0478	120.52	
0.258	3.799	79.000	142.20	0.037346	74.603	9.9730	26.777	0.013404	0.10027	1.0473	120.47	
0.272	4.000	79.371	142.87	0.037291	74.494	9.9584	26.816	0.013424	0.10042	1.0458	120.29	
0.275	4.041	79.444	143.00	0.037281	74.472	9.9555	26.824	0.013428	0.10045	1.0455	120.26	
0.297	4.360	80.000	144.00	0.037199	74.308	9.9336	26.883	0.013457	0.10067	1.0432	119.99	

* Equivalent cubic feet (NTP) per gallon of liquid

TABLE 3 CONTINUED

SATURATED LIQUID OXYGEN

PRESSURE			TEMPERATURE			DENSITY		VOLUME		DENSITY RATIO		
ATM	PSIA	KELVIN	RANKINE	GRAM-MOLE/ CM ³	LB/FT ³	LB/GAL	CM ³ / GRAM-MOLE	FT ³ /LB	GAL/LB	LIQ VOLUME CORRECTION FACTOR	NTP (70°F) CORRECTION FACTOR	VOLUME*
0.320	4.700	80.556	145.00	0.037116	74.144	9.9116	26.942	0.013487	0.10089	1.0409	119.73	
0.339	4.987	81.000	145.80	0.037050	74.013	9.8940	26.990	0.013511	0.10107	1.0391	119.51	
0.344	5.061	81.111	146.00	0.037034	73.980	9.8896	27.002	0.013517	0.10112	1.0386	119.46	
0.370	5.443	81.667	147.00	0.036951	73.815	9.8676	27.063	0.013547	0.10134	1.0363	119.19	
0.387	5.683	82.000	147.60	0.036902	73.715	9.8543	27.099	0.013566	0.10148	1.0349	119.03	
0.398	5.847	82.222	148.00	0.036868	73.649	9.8455	27.123	0.013578	0.10157	1.0340	118.93	
0.408	6.000	82.424	148.36	0.036838	73.589	9.8374	27.146	0.013589	0.10165	1.0331	118.83	
0.427	6.275	82.778	149.00	0.036785	73.483	9.8233	27.185	0.013609	0.10180	1.0316	118.66	
0.439	6.453	83.000	149.40	0.036752	73.417	9.8144	27.209	0.013621	0.10189	1.0307	118.55	
0.458	6.728	83.333	150.00	0.036702	73.317	9.8011	27.246	0.013639	0.10203	1.0293	118.39	
0.490	7.205	83.889	151.00	0.036619	73.150	9.7788	27.308	0.013670	0.10226	1.0270	118.12	
0.497	7.304	84.000	151.20	0.036602	73.117	9.7743	27.321	0.013677	0.10231	1.0265	118.07	
0.525	7.709	84.444	152.00	0.036535	72.983	9.7565	27.371	0.013702	0.10250	1.0246	117.85	
0.544	8.000	84.752	152.55	0.036489	72.891	9.7441	27.406	0.013719	0.10263	1.0233	117.70	
0.561	8.241	85.000	153.00	0.036451	72.816	9.7341	27.434	0.013733	0.10273	1.0223	117.58	
0.599	8.800	85.556	154.00	0.036367	72.648	9.7116	27.497	0.013765	0.10297	1.0199	117.31	
0.631	9.269	86.000	154.80	0.036300	72.513	9.6936	27.548	0.013791	0.10316	1.0180	117.09	
0.639	9.389	86.111	155.00	0.036283	72.479	9.6891	27.561	0.013797	0.10321	1.0175	117.04	
0.680	10.000	86.659	155.99	0.036199	72.313	9.6668	27.625	0.013829	0.10345	1.0152	116.76	
0.681	10.009	86.667	156.00	0.036198	72.310	9.6665	27.626	0.013829	0.10345	1.0152	116.76	
0.707	10.395	87.000	156.60	0.036147	72.209	9.6529	27.664	0.013849	0.10360	1.0137	116.60	
0.725	10.659	87.222	157.00	0.036113	72.141	9.6438	27.690	0.013862	0.10369	1.0128	116.49	
0.772	11.343	87.778	158.00	0.036028	71.971	9.6211	27.756	0.013894	0.10394	1.0104	116.22	
0.791	11.625	88.000	158.40	0.035994	71.903	9.6120	27.782	0.013908	0.10404	1.0094	116.11	
0.817	12.000	88.288	158.92	0.035950	71.814	9.6002	27.816	0.013925	0.10416	1.0082	115.96	
0.821	12.059	88.333	159.00	0.035943	71.801	9.5984	27.822	0.013927	0.10418	1.0080	115.94	
0.872	12.810	88.889	160.00	0.035858	71.630	9.5755	27.888	0.013961	0.10443	1.0056	115.67	
0.882	12.965	89.000	160.20	0.035840	71.596	9.5709	27.901	0.013967	0.10448	1.0051	115.61	
0.925	13.597	89.444	161.00	0.035772	71.458	9.5526	27.955	0.013994	0.10468	1.0032	115.39	
0.953	14.000	89.719	161.49	0.035729	71.373	9.5412	27.988	0.014011	0.10481	1.0020	115.25	
0.981	14.421	90.000	162.00	0.035686	71.286	9.5296	28.022	0.014028	0.10494	1.0008	115.11	
1.000	14.696	90.180	162.32	0.035658	71.231	9.5222	28.044	0.014039	0.10502	1.0000	115.02	
1.040	15.283	90.556	163.00	0.035599	71.114	9.5066	28.090	0.014062	0.10519	0.9984	114.83	
1.089	16.000	91.000	163.80	0.035530	70.976	9.4881	28.145	0.014089	0.10540	0.9964	114.61	
1.101	16.183	91.111	164.00	0.035513	70.941	9.4834	28.159	0.014096	0.10545	0.9959	114.55	
1.165	17.124	91.667	165.00	0.035426	70.767	9.4602	28.228	0.014131	0.10571	0.9935	114.27	
1.205	17.709	92.000	165.60	0.035374	70.663	9.4463	28.270	0.014152	0.10586	0.9920	114.10	
1.225	18.000	92.163	165.89	0.035348	70.612	9.4394	28.290	0.014162	0.10594	0.9913	114.02	
1.232	18.107	92.222	166.00	0.035339	70.593	9.4369	28.298	0.014166	0.10597	0.9911	113.99	
1.302	19.131	92.778	167.00	0.035251	70.419	9.4136	28.368	0.014201	0.10623	0.9886	113.71	
1.331	19.554	93.000	167.40	0.035216	70.348	9.4042	28.396	0.014215	0.10634	0.9876	113.60	
1.361	20.000	93.231	167.82	0.035180	70.276	9.3945	28.426	0.014230	0.10645	0.9866	113.48	
1.375	20.200	93.333	168.00	0.035163	70.243	9.3902	28.439	0.014236	0.10649	0.9861	113.43	

TABLE 3 CONTINUED

SATURATED LIQUID OXYGEN

PRESSURE		TEMPERATURE		GRAM-MOLE/ CM ³	DENSITY LB/FT ³	LB/GAL	CM ³ / GRAM-MOLE	VOLUME FT ³ /LB	GAL/LB	LTO VOLUME CORRECTION FACTOR	DENSITY RATIO	
ATM	PSIA	KELVIN	RANKINE								NTP (70°F)	VOLUME CORRECTION FACTOR*
1.450	21.313	93.889	169.00	0.035075	70.067	9.3666	28.510	0.014272	0.10676	0.9837	113.14	
1.466	21.542	94.000	169.20	0.035058	70.032	9.3619	28.524	0.014279	0.10682	0.9832	113.09	
1.497	22.000	94.221	169.60	0.035023	69.962	9.3526	28.553	0.014293	0.10692	0.9822	112.97	
1.529	22.473	94.444	170.00	0.034987	69.891	9.3430	28.582	0.014308	0.10703	0.9812	112.86	
1.611	23.680	95.000	171.00	0.034898	69.714	9.3194	28.655	0.014344	0.10730	0.9787	112.57	
1.633	24.000	95.144	171.26	0.034875	69.668	9.3132	28.674	0.014354	0.10737	0.9781	112.50	
1.697	24.935	95.556	172.00	0.034809	69.536	9.2956	28.728	0.014381	0.10758	0.9762	112.28	
1.768	25.975	96.000	172.80	0.034738	69.393	9.2765	28.787	0.014411	0.10780	0.9742	112.05	
1.769	26.000	96.010	172.82	0.034736	69.390	9.2761	28.788	0.014411	0.10780	0.9742	112.05	
1.786	26.293	96.111	173.00	0.034720	69.357	9.2717	28.802	0.014418	0.10785	0.9737	112.00	
1.878	27.597	96.667	174.00	0.034630	69.178	9.2478	28.876	0.014455	0.10813	0.9712	111.71	
1.905	28.000	96.828	174.29	0.034604	69.126	9.2408	28.898	0.014466	0.10822	0.9705	111.62	
1.935	28.435	97.000	174.60	0.034576	69.070	9.2334	28.921	0.014478	0.10830	0.9697	111.53	
1.974	29.005	97.222	175.00	0.034540	68.998	9.2238	28.952	0.014493	0.10842	0.9687	111.42	
2.000	29.392	97.371	175.27	0.034516	68.950	9.2173	28.972	0.014503	0.10849	0.9680	111.34	
2.041	30.000	97.602	175.68	0.034479	68.875	9.2073	29.004	0.014519	0.10861	0.9669	111.22	
2.073	30.467	97.778	176.00	0.034450	68.818	9.1996	29.028	0.014531	0.10870	0.9661	111.13	
2.114	31.057	98.000	176.40	0.034414	68.746	9.1900	29.058	0.014546	0.10881	0.9651	111.01	
2.176	31.984	98.333	177.00	0.034359	68.637	9.1754	29.104	0.014569	0.10899	0.9636	110.83	
2.177	32.000	98.339	177.01	0.034358	68.635	9.1752	29.105	0.014570	0.10899	0.9636	110.83	
2.283	33.557	98.889	178.00	0.034268	68.455	9.1511	29.182	0.014608	0.10928	0.9610	110.54	
2.305	33.878	99.000	178.20	0.034250	68.418	9.1462	29.197	0.014616	0.10933	0.9605	110.48	
2.314	34.000	99.042	178.28	0.034243	68.405	9.1444	29.203	0.014619	0.10936	0.9603	110.46	
2.394	35.187	99.444	179.00	0.034177	68.272	9.1267	29.260	0.014647	0.10957	0.9585	110.24	
2.450	36.000	99.714	179.49	0.034132	68.183	9.1148	29.298	0.014666	0.10971	0.9572	110.10	
2.509	36.876	100.000	180.00	0.034085	68.089	9.1022	29.338	0.014687	0.10986	0.9559	109.95	
2.586	38.000	100.359	180.65	0.034025	67.970	9.0862	29.390	0.014712	0.11006	0.9542	109.76	
2.628	38.624	100.556	181.00	0.033993	67.905	9.0775	29.418	0.014727	0.11016	0.9533	109.65	
2.722	40.000	100.979	181.76	0.033922	67.764	9.0587	29.479	0.014757	0.11039	0.9513	109.42	
2.726	40.057	101.000	181.80	0.033919	67.757	9.0578	29.482	0.014759	0.11040	0.9512	109.41	
2.751	40.434	101.111	182.00	0.033900	67.720	9.0528	29.498	0.014767	0.11046	0.9507	109.35	
2.858	42.000	101.577	182.84	0.033822	67.564	9.0320	29.566	0.014801	0.11072	0.9485	109.10	
2.879	42.307	101.667	183.00	0.033807	67.534	9.0280	29.579	0.014807	0.11077	0.9481	109.05	
2.957	43.461	102.000	183.60	0.033751	67.422	9.0130	29.629	0.014832	0.11095	0.9465	108.87	
2.994	44.000	102.153	183.88	0.033725	67.371	9.0061	29.651	0.014843	0.11104	0.9458	108.79	
3.000	44.088	102.178	183.92	0.033721	67.362	9.0050	29.655	0.014845	0.11105	0.9457	108.77	
3.011	44.243	102.222	184.00	0.033714	67.347	9.0030	29.661	0.014848	0.11107	0.9455	108.75	
3.130	46.000	102.711	184.88	0.033631	67.183	8.9810	29.734	0.014885	0.11135	0.9432	108.48	
3.147	46.245	102.778	185.00	0.033620	67.160	8.9780	29.744	0.014890	0.11138	0.9429	108.45	
3.203	47.064	103.000	185.40	0.033582	67.085	8.9679	29.778	0.014907	0.11151	0.9418	108.33	
3.266	48.000	103.250	185.85	0.033540	67.000	8.9566	29.815	0.014925	0.11165	0.9406	108.19	
3.287	48.313	103.333	186.00	0.033526	66.972	8.9528	29.828	0.014932	0.11170	0.9402	108.14	
3.402	50.000	103.774	186.79	0.033451	66.822	8.9328	29.895	0.014965	0.11195	0.9381	107.90	
3.433	50.449	103.889	187.00	0.033431	66.783	8.9275	29.912	0.014974	0.11201	0.9376	107.84	
3.462	50.884	104.000	187.20	0.033412	66.745	8.9225	29.929	0.014982	0.11208	0.9370	107.78	

TABLE 3 CONTINUED

SATURATED LIQUID OXYGEN

PRESSURE		TEMPERATURE		GRAM-MOLE/ CM ³	DENSITY LB/FT ³	LB/GAL	CM ³ / GRAM-MOLE	VOLUME FT ³ /LB	GAL/LB	LIQ VOLUME CORRECTION FACTOR	DENSITY RATIO NTP (70°F) VOLUME CORRECTION FACTOR*
ATM	PSIA	KELVIN	RANKINE								
3.538	52.000	104.281	187.71	0.033364	66.648	8.9096	29.973	0.015004	0.11224	0.9357	107.62
3.583	52.654	104.444	188.00	0.033336	66.593	8.9021	29.998	0.015017	0.11233	0.9349	107.53
3.674	54.000	104.775	188.60	0.033279	66.479	8.8869	30.049	0.015042	0.11252	0.9333	107.35
3.738	54.930	105.000	189.00	0.033240	66.402	8.8766	30.084	0.015060	0.11266	0.9322	107.22
3.811	56.000	105.255	189.46	0.033196	66.313	8.8648	30.124	0.015080	0.11281	0.9310	107.08
3.897	57.277	105.556	190.00	0.033144	66.210	8.8509	30.171	0.015104	0.11298	0.9295	106.91
3.947	58.000	105.723	190.30	0.033115	66.152	8.8432	30.198	0.015117	0.11308	0.9287	106.82
4.000	58.784	105.903	190.63	0.033084	66.089	8.8348	30.226	0.015131	0.11319	0.9278	106.72
4.029	59.208	106.000	190.80	0.033067	66.055	8.8303	30.242	0.015139	0.11325	0.9273	106.66
4.062	59.698	106.111	191.00	0.033048	66.017	8.8252	30.259	0.015148	0.11331	0.9268	106.60
4.083	60.000	106.179	191.12	0.033036	65.993	8.8220	30.270	0.015153	0.11335	0.9265	106.56
4.219	62.000	106.624	191.92	0.032958	65.838	8.8012	30.341	0.015189	0.11362	0.9243	106.31
4.232	62.194	106.667	192.00	0.032951	65.823	8.7993	30.348	0.015192	0.11365	0.9241	106.29
4.336	63.728	107.000	192.60	0.032892	65.706	8.7836	30.402	0.015219	0.11385	0.9224	106.10
4.355	64.000	107.059	192.71	0.032882	65.686	8.7809	30.412	0.015224	0.11388	0.9222	106.07
4.407	64.765	107.222	193.00	0.032853	65.628	8.7732	30.438	0.015237	0.11398	0.9213	105.97
4.491	66.000	107.483	193.47	0.032807	65.536	8.7609	30.481	0.015259	0.11414	0.9201	105.83
4.587	67.415	107.778	194.00	0.032755	65.432	8.7470	30.530	0.015283	0.11432	0.9186	105.66
4.627	68.000	107.898	194.22	0.032734	65.390	8.7413	30.549	0.015293	0.11440	0.9180	105.59
4.661	68.496	108.000	194.40	0.032716	65.354	8.7365	30.566	0.015301	0.11446	0.9175	105.53
4.763	70.000	108.305	194.95	0.032662	65.246	8.7221	30.617	0.015327	0.11465	0.9160	105.36
4.773	70.142	108.333	195.00	0.032657	65.235	8.7207	30.622	0.015329	0.11467	0.9158	105.34
4.899	72.000	108.703	195.66	0.032591	65.104	8.7031	30.684	0.015360	0.11490	0.9140	105.13
4.964	72.951	108.889	196.00	0.032557	65.037	8.6942	30.715	0.015376	0.11502	0.9131	105.02
5.000	73.480	108.992	196.19	0.032539	65.001	8.6893	30.732	0.015384	0.11508	0.9125	104.96
5.003	73.522	109.000	196.20	0.032538	64.998	8.6889	30.734	0.015385	0.11509	0.9125	104.96
5.035	74.000	109.092	196.37	0.032521	64.965	8.6845	30.749	0.015393	0.11515	0.9120	104.90
5.161	75.840	109.444	197.00	0.032458	64.838	8.6676	30.809	0.015423	0.11537	0.9103	104.70
5.171	76.000	109.475	197.05	0.032452	64.827	8.6662	30.814	0.015426	0.11539	0.9101	104.68
5.308	78.000	109.850	197.73	0.032385	64.692	8.6481	30.879	0.015458	0.11563	0.9082	104.46
5.363	78.813	110.000	198.00	0.032358	64.638	8.6409	30.905	0.015471	0.11573	0.9074	104.38
5.444	80.000	110.218	198.39	0.032318	64.559	8.6303	30.942	0.015490	0.11587	0.9063	104.25
5.571	81.870	110.556	199.00	0.032257	64.437	8.6139	31.001	0.015519	0.11609	0.9046	104.05
5.580	82.000	110.579	199.04	0.032253	64.428	8.6128	31.005	0.015521	0.11611	0.9045	104.04
5.716	84.000	110.934	199.68	0.032188	64.299	8.5955	31.068	0.015552	0.11634	0.9027	103.83
5.742	84.378	111.000	199.80	0.032176	64.275	8.5923	31.079	0.015558	0.11638	0.9023	103.79
5.785	85.013	111.111	200.00	0.032155	64.234	8.5869	31.099	0.015568	0.11646	0.9018	103.72
5.852	86.000	111.282	200.31	0.032124	64.172	8.5785	31.129	0.015583	0.11657	0.9009	103.62
5.988	88.000	111.625	200.93	0.032061	64.046	8.5617	31.191	0.015614	0.11680	0.8991	103.42
6.005	88.176	111.655	200.98	0.032055	64.035	8.5602	31.196	0.015617	0.11682	0.8990	103.40
6.005	88.244	111.667	201.00	0.032053	64.030	8.5596	31.198	0.015618	0.11683	0.8989	103.39
6.124	90.000	111.963	201.53	0.031999	63.921	8.5451	31.251	0.015644	0.11703	0.8974	103.22
6.139	90.224	112.000	201.60	0.031992	63.908	8.5432	31.258	0.015648	0.11705	0.8972	103.20
6.230	91.563	112.222	202.00	0.031951	63.825	8.5322	31.298	0.015668	0.11720	0.8960	103.06
6.260	92.000	112.294	202.13	0.031937	63.799	8.5287	31.311	0.015674	0.11725	0.8957	103.02

TABLE 3 CONTINUED

SATURATED LIQUID OXYGEN

PRESSURE			TEMPERATURE			DENSITY		VOLUME			LIQ VOLUME		DENSITY RATIO	
ATM	PSIA	KELVIN	RANKINE	GRAM-MOLE/ CM ³	LB/FT ³	LB/GAL	CM ³ / GRAM-MOLE	FT ³ /LB	GAL/LB	CORRECTION FACTOR	NTP (70°F) CORRECTION FACTOR*	VOLUME FT ³ /GAL		
6.396	94.000	112.621	202.72	0.031877	63.678	8.5124	31.371	0.015704	0.11748	0.8940		102.82		
6.462	94.972	112.778	203.00	0.031847	63.619	8.5046	31.400	0.015719	0.11758	0.8931		102.73		
6.532	96.000	112.942	203.30	0.031817	63.558	8.4964	31.430	0.015734	0.11770	0.8923		102.63		
6.557	96.361	113.000	203.40	0.031806	63.536	8.4936	31.441	0.015739	0.11774	0.8920		102.60		
6.668	98.000	113.259	203.87	0.031757	63.439	8.4806	31.489	0.015763	0.11792	0.8906		102.44		
6.701	98.473	113.333	204.00	0.031744	63.412	8.4769	31.502	0.015770	0.11797	0.8902		102.40		
6.805	100.000	113.571	204.43	0.031699	63.322	8.4650	31.547	0.015792	0.11813	0.8890		102.25		
6.805	102.000	113.879	204.98	0.031641	63.206	8.4495	31.605	0.015821	0.11835	0.8873		102.06		
6.945	102.067	113.889	205.00	0.031639	63.203	8.4490	31.607	0.015822	0.11836	0.8873		102.06		
7.000	102.797	114.000	205.20	0.031618	63.161	8.4434	31.628	0.015833	0.11844	0.8867		101.99		
7.000	102.872	114.011	205.22	0.031616	63.156	8.4428	31.630	0.015834	0.11844	0.8866		101.98		
7.077	104.000	114.182	205.53	0.031584	63.092	8.4342	31.662	0.015850	0.11857	0.8857		101.88		
7.196	105.755	114.444	206.00	0.031534	62.992	8.4208	31.712	0.015875	0.11875	0.8843		101.72		
7.213	106.000	114.481	206.07	0.031527	62.978	8.4190	31.719	0.015878	0.11878	0.8841		101.70		
7.349	108.000	114.776	206.60	0.031471	62.866	8.4040	31.776	0.015907	0.11899	0.8826		101.51		
7.454	109.539	115.000	207.00	0.031428	62.781	8.3925	31.819	0.015928	0.11915	0.8814		101.38		
7.485	110.000	115.067	207.12	0.031415	62.755	8.3891	31.832	0.015935	0.11920	0.8810		101.33		
7.621	112.000	115.354	207.64	0.031360	62.645	8.3744	31.888	0.015963	0.11941	0.8795		101.16		
7.718	113.421	115.556	208.00	0.031321	62.567	8.3640	31.927	0.015983	0.11956	0.8784		101.03		
7.757	114.000	115.637	208.15	0.031305	62.536	8.3598	31.944	0.015991	0.11962	0.8779		100.98		
7.893	116.000	115.917	208.65	0.031251	62.428	8.3454	31.999	0.016018	0.11983	0.8764		100.81		
7.934	116.598	116.000	208.80	0.031235	62.396	8.3411	32.015	0.016027	0.11989	0.8760		100.75		
7.989	117.402	116.111	209.00	0.031213	62.353	8.3353	32.037	0.016038	0.11997	0.8754		100.69		
8.000	117.568	116.134	209.04	0.031209	62.344	8.3342	32.042	0.016040	0.11999	0.8752		100.67		
8.029	118.000	116.193	209.15	0.031198	62.321	8.3311	32.054	0.016046	0.12033	0.8749		100.63		
8.165	120.000	116.466	209.64	0.031144	62.215	8.3169	32.109	0.016073	0.12024	0.8734		100.46		
8.266	121.483	116.667	210.00	0.031105	62.136	8.3064	32.149	0.016094	0.12039	0.8723		100.34		
8.302	122.000	116.736	210.12	0.031092	62.109	8.3028	32.163	0.016101	0.12044	0.8719		100.29		
8.436	123.981	117.000	210.60	0.031040	62.006	8.2890	32.217	0.016127	0.12064	0.8705		100.13		
8.438	124.000	117.003	210.60	0.031039	62.005	8.2899	32.217	0.016128	0.12064	0.8705		100.12		
8.551	125.666	117.222	211.00	0.030996	61.919	8.2773	32.262	0.016150	0.12081	0.8693		99.98		
8.574	126.000	117.266	211.08	0.030988	61.901	8.2750	32.271	0.016155	0.12085	0.8690		99.96		
8.710	128.000	117.526	211.55	0.030935	61.799	8.2613	32.325	0.016182	0.12105	0.8676		99.79		
8.843	129.952	117.778	212.00	0.030886	61.699	8.2480	32.377	0.016208	0.12124	0.8662		99.63		
8.846	130.000	117.784	212.01	0.030885	61.697	8.2477	32.378	0.016208	0.12125	0.8662		99.63		
8.961	131.696	118.000	212.40	0.030842	61.611	8.2362	32.423	0.016231	0.12142	0.8650		99.49		
8.982	132.000	118.038	212.47	0.030835	61.596	8.2342	32.431	0.016235	0.12145	0.8647		99.46		
9.000	132.264	118.072	212.53	0.030828	61.582	8.2327	32.438	0.016238	0.12147	0.8646		99.44		
9.118	134.000	118.290	212.92	0.030784	61.495	8.2207	32.484	0.016261	0.12164	0.8633		99.30		
9.142	134.344	118.333	213.00	0.030776	61.478	8.2184	32.493	0.016266	0.12168	0.8631		99.27		
9.254	136.000	118.539	213.37	0.030734	61.396	8.2074	32.537	0.016288	0.12184	0.8619		99.14		
9.390	138.000	118.796	213.81	0.030685	61.297	8.1942	32.589	0.016314	0.12204	0.8605		98.98		
9.448	138.841	118.889	214.00	0.030664	61.255	8.1887	32.611	0.016325	0.12212	0.8600		98.91		
9.510	139.754	119.000	214.20	0.030642	61.211	8.1827	32.635	0.016337	0.12221	0.8593		98.84		
9.526	140.000	119.030	214.25	0.030636	61.199	8.1811	32.642	0.016340	0.12223	0.8592		98.82		

TABLE 3 CONTINUED

SATURATED LIQUID OXYGEN

PRESSURE			TEMPERATURE		DENSITY		VOLUME		LIQ VOLUME CORRECTION FACTOR		DENSITY RATIO	
ATM	PSIA	KELVIN	RANKINE	GRAM-MOLE/CM ³	LB/FT ³	LB/GAL	CM ³ /GRAM-MOLE	FT ³ /LB	GAL/LB			
9.662	142.003	119.271	214.69	0.030587	61.101	8.1680	32.694	0.016366	0.12243	0.8578	98.66	
9.761	143.447	119.444	215.00	0.030552	61.031	8.1586	32.731	0.016385	0.12257	0.8568	98.55	
9.799	144.000	119.510	215.12	0.030538	61.004	8.1551	32.746	0.016392	0.12262	0.8564	98.51	
9.935	146.003	119.747	215.54	0.030490	60.908	8.1422	32.797	0.016418	0.12282	0.8551	98.35	
10.000	146.963	119.860	215.75	0.030467	60.862	8.1360	32.822	0.016431	0.12291	0.8544	98.28	
10.071	148.000	119.981	215.97	0.030442	60.812	8.1294	32.849	0.016444	0.12301	0.8537	98.20	
10.082	148.162	120.000	216.00	0.030438	60.804	8.1284	32.853	0.016446	0.12303	0.8536	98.19	
10.207	150.000	120.213	216.38	0.030395	60.717	8.1167	32.900	0.016470	0.12320	0.8524	98.04	
10.343	152.000	120.443	216.80	0.030347	60.623	8.1041	32.952	0.016495	0.12339	0.8511	97.89	
10.410	152.988	120.556	217.00	0.030324	60.576	8.0979	32.977	0.016508	0.12349	0.8504	97.82	
10.479	154.000	120.671	217.21	0.030300	60.529	8.0915	33.003	0.016521	0.12359	0.8498	97.74	
10.615	156.000	120.896	217.61	0.030254	60.435	8.0790	33.054	0.016547	0.12378	0.8484	97.59	
10.678	156.929	121.000	217.80	0.030232	60.392	8.0733	33.077	0.016558	0.12387	0.8478	97.52	
10.746	157.926	121.111	218.00	0.030209	60.346	8.0671	33.103	0.016571	0.12396	0.8472	97.44	
10.751	158.000	121.119	218.01	0.030207	60.343	8.0666	33.105	0.016572	0.12397	0.8471	97.44	
10.887	160.000	121.341	218.41	0.030161	60.250	8.0543	33.155	0.016597	0.12416	0.8458	97.29	
11.000	161.656	121.523	218.74	0.030123	60.174	8.0441	33.197	0.016618	0.12431	0.8448	97.17	
11.023	162.000	121.560	218.81	0.030115	60.159	8.0420	33.206	0.016623	0.12435	0.8446	97.14	
11.090	162.978	121.667	219.00	0.030093	60.114	8.0361	33.231	0.016635	0.12444	0.8439	97.07	
11.159	164.000	121.778	219.20	0.030069	60.067	8.0298	33.256	0.016648	0.12454	0.8433	96.99	
11.296	166.000	121.993	219.59	0.030024	59.977	8.0177	33.307	0.016673	0.12472	0.8420	96.85	
11.300	166.065	122.000	219.60	0.030023	59.974	8.0173	33.308	0.016674	0.12473	0.8420	96.84	
11.432	168.000	122.207	219.97	0.029979	59.886	8.0056	33.357	0.016698	0.12491	0.8407	96.70	
11.442	168.146	122.222	220.00	0.029975	59.880	8.0047	33.361	0.016700	0.12493	0.8406	96.69	
11.568	170.000	122.419	220.35	0.029934	59.796	7.9936	33.407	0.016723	0.12510	0.8395	96.56	
11.704	172.000	122.629	220.73	0.029889	59.707	7.9817	33.457	0.016748	0.12529	0.8382	96.41	
11.801	173.430	122.778	221.00	0.029857	59.643	7.9732	33.493	0.016766	0.12542	0.8373	96.31	
11.840	174.000	122.837	221.11	0.029845	59.618	7.9698	33.507	0.016773	0.12547	0.8370	96.27	
11.947	175.577	123.000	221.40	0.029810	59.548	7.9604	33.546	0.016793	0.12562	0.8360	96.16	
11.976	176.000	123.044	221.48	0.029800	59.530	7.9579	33.557	0.016798	0.12566	0.8357	96.13	
12.000	176.352	123.080	221.54	0.029792	59.514	7.9559	33.566	0.016803	0.12569	0.8355	96.10	
12.112	178.000	123.248	221.85	0.029756	59.441	7.9462	33.607	0.016823	0.12585	0.8345	95.98	
12.169	178.834	123.333	222.00	0.029738	59.405	7.9413	33.627	0.016834	0.12592	0.8340	95.93	
12.248	180.000	123.452	222.21	0.029712	59.354	7.9344	33.656	0.016848	0.12603	0.8333	95.84	
12.364	182.000	123.653	222.58	0.029669	59.266	7.9228	33.706	0.016873	0.12622	0.8320	95.70	
12.520	184.000	123.853	222.94	0.029625	59.180	7.9112	33.755	0.016898	0.12640	0.8308	95.56	
12.545	184.357	123.889	223.00	0.029617	59.164	7.9091	33.764	0.016902	0.12644	0.8306	95.54	
12.621	185.476	124.000	223.20	0.029593	59.116	7.9026	33.792	0.016916	0.12654	0.8299	95.45	
12.657	186.000	124.052	223.29	0.029582	59.093	7.8996	33.805	0.016922	0.12659	0.8296	95.42	
12.793	188.000	124.249	223.65	0.029539	59.007	7.8881	33.854	0.016947	0.12677	0.8284	95.28	
12.929	190.000	124.444	224.00	0.029496	58.921	7.8766	33.903	0.016972	0.12696	0.8272	95.14	
12.929	190.002	124.444	224.00	0.029496	58.921	7.8766	33.903	0.016972	0.12696	0.8272	95.14	
13.000	191.048	124.546	224.18	0.029473	58.876	7.8706	33.929	0.016985	0.12705	0.8266	95.07	
13.065	192.000	124.638	224.35	0.029453	58.836	7.8652	33.953	0.016996	0.12714	0.8260	95.01	
13.201	194.000	124.831	224.70	0.029410	58.751	7.8538	34.002	0.017021	0.12733	0.8248	94.87	

TABLE 3 CONTINUED

SATURATED LIQUID OXYGEN

PRESSURE		TEMPERATURE		DENSITY		VOLUME		LIQ VOLUME CORRECTION FACTOR		DENSITY RATIO NTP (70°F) VOLUME CORRECTION FACTOR*	
ATM	PSIA	KELVIN	RANKINE	GRAM-MOLE/ CM ³	LB/FT ³	LB/GAL	CM ³ / GRAM-MOLE	FT ³ /LB	GAL/LB	LIQ VOLUME CORRECTION FACTOR	DENSITY RATIO NTP (70°F) VOLUME CORRECTION FACTOR*
13.321	195.771	125.000	225.00	0.029373	58.675	7.8438	34.045	0.017043	0.12749	0.8237	94.75
13.337	196.000	125.022	225.04	0.029368	58.666	7.8425	34.051	0.017046	0.12751	0.8236	94.73
13.473	198.000	125.212	225.38	0.029326	58.581	7.8312	34.100	0.017070	0.12769	0.8224	94.60
13.609	200.000	125.400	225.72	0.029283	58.497	7.8199	34.149	0.017095	0.12788	0.8212	94.46
13.722	201.664	125.556	226.00	0.029249	58.428	7.8106	34.190	0.017115	0.12803	0.8203	94.35
13.949	205.000	125.865	226.56	0.029179	58.288	7.7920	34.271	0.017156	0.12834	0.8183	94.12
14.000	205.744	125.933	226.68	0.029163	58.257	7.7879	34.290	0.017165	0.12840	0.8179	94.07
14.049	206.470	126.000	226.80	0.029148	58.227	7.7839	34.307	0.017174	0.12847	0.8174	94.02
14.132	207.684	126.111	227.00	0.029123	58.177	7.7771	34.337	0.017189	0.12858	0.8167	93.94
14.290	210.000	126.322	227.38	0.029075	58.081	7.7643	34.393	0.017217	0.12879	0.8154	93.79
14.630	213.832	126.667	228.00	0.028996	57.924	7.7433	34.487	0.017264	0.12914	0.8132	93.53
14.806	215.000	126.771	228.19	0.028972	57.876	7.7369	34.515	0.017278	0.12925	0.8125	93.46
14.970	217.583	127.000	228.60	0.028920	57.771	7.7228	34.578	0.017310	0.12949	0.8110	93.29
14.977	220.000	127.213	228.98	0.028871	57.672	7.7097	34.637	0.017339	0.12971	0.8097	93.13
15.000	220.440	127.222	229.00	0.028868	57.668	7.7091	34.640	0.017341	0.12972	0.8096	93.12
15.310	225.000	127.647	229.77	0.028769	57.470	7.6827	34.759	0.017400	0.13016	0.8068	92.80
15.414	226.518	127.778	230.00	0.028739	57.409	7.6745	34.796	0.017419	0.13030	0.8060	92.70
15.591	229.118	128.000	230.40	0.028687	57.305	7.6605	34.860	0.017451	0.13054	0.8045	92.53
15.651	230.000	128.075	230.53	0.028674	57.279	7.6571	34.875	0.017458	0.13060	0.8041	92.49
15.859	233.059	128.333	231.00	0.028613	57.157	7.6408	34.949	0.017496	0.13088	0.8024	92.30
15.991	235.000	128.496	231.29	0.028574	57.081	7.6306	34.997	0.017519	0.13105	0.8013	92.17
16.000	235.136	128.507	231.31	0.028572	57.075	7.6298	35.000	0.017521	0.13106	0.8013	92.16
16.313	239.735	128.889	232.00	0.028481	56.894	7.6056	35.111	0.017577	0.13148	0.7987	91.87
16.331	240.000	128.911	232.04	0.028476	56.883	7.6042	35.118	0.017580	0.13151	0.7986	91.85
16.405	241.087	129.000	232.20	0.028454	56.841	7.5985	35.144	0.017593	0.13161	0.7980	91.78
16.671	245.000	129.319	232.77	0.028377	56.687	7.5780	35.239	0.017641	0.13196	0.7958	91.54
16.777	246.548	129.444	233.00	0.028347	56.627	7.5699	35.277	0.017659	0.13210	0.7950	91.44
17.000	249.832	129.708	233.48	0.028283	56.499	7.5528	35.357	0.017699	0.13240	0.7932	91.23
17.011	250.000	129.722	233.50	0.028280	56.493	7.5520	35.361	0.017701	0.13242	0.7931	91.22
17.249	253.498	130.000	234.00	0.028212	56.357	7.5338	35.446	0.017744	0.13273	0.7912	91.00
17.352	255.000	130.119	234.21	0.028183	56.299	7.5261	35.482	0.017762	0.13287	0.7904	90.91
17.692	260.000	130.510	234.92	0.028086	56.106	7.5003	35.604	0.017823	0.13333	0.7877	90.60
17.732	260.587	130.556	235.00	0.028075	56.084	7.4973	35.619	0.017831	0.13338	0.7874	90.56
18.000	264.528	130.860	235.55	0.027999	55.932	7.4771	35.715	0.017879	0.13374	0.7852	90.32
18.032	265.000	130.896	235.61	0.027990	55.914	7.4746	35.726	0.017885	0.13379	0.7850	90.29
18.125	266.360	131.000	235.80	0.027964	55.862	7.4677	35.760	0.017901	0.13391	0.7842	90.20
18.224	267.818	131.111	236.00	0.027937	55.807	7.4602	35.795	0.017919	0.13404	0.7835	90.11
18.372	270.000	131.277	236.30	0.027895	55.723	7.4491	35.849	0.017946	0.13424	0.7823	89.98
18.713	275.000	131.652	236.97	0.027800	55.533	7.4237	35.972	0.018007	0.13470	0.7796	89.67
18.726	275.191	131.667	237.00	0.027796	55.526	7.4227	35.976	0.018010	0.13472	0.7795	89.66
19.000	279.224	131.966	237.54	0.027720	55.373	7.4023	36.076	0.018059	0.13509	0.7774	89.41
19.031	279.684	132.000	237.60	0.027711	55.356	7.4000	36.087	0.018065	0.13514	0.7771	89.39
19.053	280.000	132.023	237.64	0.027705	55.344	7.3984	36.095	0.018069	0.13516	0.7770	89.37
19.237	282.709	132.222	238.00	0.027654	55.241	7.3847	36.162	0.018102	0.13541	0.7755	89.20

TABLE 3 CONTINUED

SATURATED LIQUID OXYGEN

PRESSURE			TEMPERATURE			DENSITY		VOLUME		LIQ VOLUME		DENSITY RATIO	
ATM	PSIA	KELVIN	RANKINE	GRAM-MOLE/ CM ³	LB/FT ³	LB/GAL	CM ³ / GRAM-MOLE	FT ³ /LB	GAL/LB	CORRECTION FACTOR	NTP (70°F) CORRECTION FACTOR*	VOLUME CORRECTION FACTOR*	
19.393	285.000	132.389	238.30	0.027610	55.155	7.3732	36.218	0.018131	0.13563	0.7743		89.06	
19.733	290.000	132.751	238.95	0.027516	54.967	7.3480	36.342	0.018193	0.13609	0.7717		88.76	
19.759	290.373	132.778	239.00	0.027509	54.953	7.3462	36.351	0.018197	0.13613	0.7715		88.74	
19.970	293.480	133.000	239.40	0.027451	54.837	7.3306	36.429	0.018236	0.13641	0.7698		88.55	
20.000	293.920	133.031	239.46	0.027443	54.820	7.3284	36.439	0.018241	0.13646	0.7696		88.52	
20.073	295.000	133.108	239.59	0.027423	54.780	7.3230	36.466	0.018255	0.13656	0.7690		88.46	
20.290	298.186	133.333	240.00	0.027363	54.661	7.3071	36.546	0.018295	0.13685	0.7674		88.26	
20.414	300.000	133.461	240.23	0.027329	54.593	7.2980	36.591	0.018317	0.13702	0.7664		88.16	
20.754	305.000	133.809	240.86	0.027236	54.407	7.2731	36.716	0.018380	0.13749	0.7638		87.85	
20.832	306.148	133.889	241.00	0.027214	54.364	7.2674	36.745	0.018394	0.13760	0.7632		87.79	
21.000	308.616	134.000	241.20	0.027184	54.304	7.2594	36.786	0.018415	0.13775	0.7624		87.69	
21.094	310.000	134.154	241.48	0.027169	54.272	7.2552	36.807	0.018426	0.13783	0.7619		87.64	
21.384	314.262	134.444	242.00	0.027064	54.063	7.2272	36.950	0.018497	0.13837	0.7590		87.30	
21.434	315.000	134.494	242.09	0.027050	54.036	7.2235	36.969	0.018506	0.13844	0.7586		87.26	
21.775	320.000	134.831	242.70	0.026957	53.851	7.1988	37.095	0.018570	0.13891	0.7560		86.96	
21.947	322.529	135.000	243.00	0.026911	53.757	7.1863	37.160	0.018602	0.13915	0.7547		86.81	
22.000	323.312	135.052	243.09	0.026896	53.728	7.1825	37.180	0.018612	0.13923	0.7543		86.76	
22.115	325.000	135.164	243.30	0.026865	53.666	7.1741	37.223	0.018634	0.13939	0.7534		86.66	
22.455	330.000	135.493	243.89	0.026773	53.482	7.1495	37.351	0.018698	0.13987	0.7508		86.36	
22.520	330.951	135.556	244.00	0.026755	53.447	7.1448	37.376	0.018710	0.13996	0.7503		86.30	
22.795	335.000	135.819	244.47	0.026681	53.298	7.1249	37.480	0.018762	0.14035	0.7482		86.06	
22.986	337.802	136.000	244.80	0.026629	53.195	7.1111	37.553	0.018799	0.14062	0.7468		85.90	
23.000	338.000	136.013	244.82	0.026625	53.187	7.1101	37.558	0.018801	0.14064	0.7467		85.89	
23.104	339.531	136.111	245.00	0.026597	53.131	7.1026	37.598	0.018821	0.14079	0.7459		85.79	
23.136	340.000	136.141	245.05	0.026589	53.114	7.1003	37.610	0.018827	0.14084	0.7457		85.77	
23.476	345.000	136.460	245.63	0.026497	52.931	7.0758	37.740	0.018893	0.14133	0.7431		85.47	
23.698	348.270	136.667	246.00	0.026437	52.811	7.0598	37.826	0.018936	0.14165	0.7414		85.28	
23.816	350.000	136.775	246.20	0.026405	52.747	7.0513	37.872	0.018958	0.14182	0.7405		85.17	
24.000	352.704	136.945	246.50	0.026355	52.648	7.0380	37.943	0.018994	0.14209	0.7391		85.01	
24.060	353.590	137.000	246.60	0.026339	52.616	7.0337	37.966	0.019006	0.14217	0.7387		84.96	
24.156	355.000	137.088	246.76	0.026313	52.564	7.0268	38.004	0.019024	0.14231	0.7379		84.88	
24.304	357.170	137.222	247.00	0.026274	52.485	7.0162	38.061	0.019053	0.14253	0.7368		84.75	
24.496	360.000	137.397	247.31	0.026222	52.381	7.0023	38.136	0.019091	0.14281	0.7354		84.58	
24.837	365.000	137.703	247.87	0.026130	52.198	6.9778	38.270	0.019158	0.14331	0.7328		84.29	
24.921	366.233	137.778	248.00	0.026107	52.153	6.9718	38.303	0.019175	0.14344	0.7322		84.21	
25.000	367.400	137.849	248.13	0.026086	52.110	6.9661	38.335	0.019190	0.14355	0.7316		84.15	
25.170	369.904	138.000	248.40	0.026040	52.018	6.9538	38.402	0.019224	0.14381	0.7303		84.00	
25.177	370.000	138.006	248.41	0.026038	52.015	6.9533	38.405	0.019225	0.14382	0.7302		83.99	
25.517	375.000	138.306	248.95	0.025947	51.831	6.9289	38.541	0.019293	0.14437	0.7277		83.70	
25.549	375.461	138.333	249.00	0.025938	51.815	6.9266	38.553	0.019300	0.14437	0.7274		83.67	
25.857	380.000	138.603	249.49	0.025855	51.648	6.9044	38.677	0.019362	0.14484	0.7251		83.40	
26.000	382.096	138.727	249.71	0.025816	51.571	6.8941	38.735	0.019391	0.14505	0.7240		83.28	
26.188	384.857	138.889	250.00	0.025766	51.470	6.8805	38.811	0.019429	0.14534	0.7226		83.11	
26.198	385.000	138.897	250.02	0.025763	51.465	6.8798	38.815	0.019431	0.14535	0.7225		83.10	

TABLE 3 CONTINUED

SATURATED LIQUID OXYGEN

PRESSURE			TEMPERATURE			DENSITY			VOLUME			LIQ VOLUME CORRECTION FACTOR		DENSITY RATIO NTP (70°F)		VOLUME CORRECTION FACTOR*	
ATM	PSIA		KELVIN	RANKINE		GRAM-MOLE/CM ³	LB/FT ³	LB/GAL	CM ³ /GRAM-MOLE	FT ³ /LB	GAL/LB						
26.317	386.756		139.000	250.20		0.025731	51.400	6.8712	38.864	0.019455	0.14553	0.7216				83.00	
26.538	390.000		139.189	250.54		0.025671	51.281	6.8553	38.954	0.019500	0.14587	0.7199				82.81	
26.839	394.422		139.444	251.00		0.025590	51.119	6.8336	39.078	0.019562	0.14634	0.7177				82.55	
26.878	395.000		139.478	251.06		0.025579	51.098	6.8308	39.094	0.019570	0.14640	0.7174				82.51	
27.000	396.792		139.581	251.25		0.025546	51.032	6.8220	39.145	0.019596	0.14659	0.7164				82.40	
27.218	400.000		139.764	251.58		0.025487	50.914	6.8062	39.235	0.019641	0.14693	0.7148				82.21	
27.501	404.159		140.000	252.00		0.025411	50.761	6.7857	39.354	0.019700	0.14737	0.7126				81.97	
27.559	405.000		140.048	252.09		0.025395	50.730	6.7816	39.378	0.019712	0.14746	0.7122				81.92	
27.899	410.000		140.329	252.59		0.025303	50.545	6.7569	39.522	0.019784	0.14800	0.7096				81.62	
28.000	411.488		140.412	252.74		0.025275	50.490	6.7495	39.565	0.019806	0.14816	0.7088				81.53	
28.176	414.069		140.556	253.00		0.025227	50.395	6.7368	39.639	0.019843	0.14844	0.7075				81.38	
28.239	415.000		140.607	253.09		0.025210	50.360	6.7322	39.667	0.019857	0.14854	0.7070				81.32	
28.579	420.000		140.893	253.59		0.025117	50.175	6.7074	39.813	0.019930	0.14909	0.7044				81.02	
28.724	422.125		141.000	253.80		0.025078	50.096	6.6969	39.876	0.019962	0.14932	0.7033				80.89	
28.862	424.156		141.111	254.00		0.025040	50.021	6.6868	39.936	0.019992	0.14955	0.7022				80.77	
28.919	425.000		141.157	254.08		0.025024	49.989	6.6826	39.961	0.020004	0.14964	0.7016				80.72	
29.000	426.184		141.222	254.20		0.025002	49.945	6.6767	39.996	0.020022	0.14977	0.7012				80.65	
29.260	430.000		141.429	254.57		0.024931	49.803	6.6577	40.110	0.020079	0.15020	0.6992				80.42	
29.561	434.422		141.667	255.00		0.024849	49.638	6.6357	40.244	0.020146	0.15070	0.6969				80.15	
29.600	435.000		141.698	255.06		0.024838	49.617	6.6328	40.261	0.020155	0.15077	0.6966				80.12	
29.940	440.000		141.964	255.54		0.024744	49.430	6.6078	40.414	0.020231	0.15134	0.6939				79.82	
29.986	440.669		142.000	255.60		0.024732	49.404	6.6044	40.434	0.020241	0.15141	0.6936				79.78	
30.000	440.880		142.011	255.62		0.024728	49.397	6.6034	40.441	0.020244	0.15144	0.6935				79.76	
30.271	444.870		142.222	256.00		0.024653	49.247	6.5833	40.564	0.020306	0.15190	0.6914				79.52	
30.280	445.000		142.229	256.01		0.024650	49.242	6.5827	40.568	0.020308	0.15191	0.6913				79.51	
30.621	450.000		142.492	256.48		0.024556	49.053	6.5575	40.723	0.020386	0.15250	0.6887				79.21	
30.961	455.000		142.752	256.95		0.024461	48.864	6.5322	40.881	0.020465	0.15309	0.6860				78.90	
30.995	455.501		142.778	257.00		0.024452	48.845	6.5297	40.897	0.020473	0.15315	0.6857				78.87	
31.000	455.576		142.782	257.01		0.024450	48.842	6.5293	40.899	0.020474	0.15316	0.6857				78.87	
31.288	459.806		143.000	257.40		0.024370	48.682	6.5078	41.034	0.020542	0.15366	0.6834				78.61	
31.301	460.000		143.010	257.42		0.024366	48.674	6.5068	41.041	0.020545	0.15369	0.6833				78.60	
31.641	465.000		143.266	257.88		0.024271	48.484	6.4813	41.202	0.020626	0.15429	0.6807				78.29	
31.731	466.320		143.333	258.00		0.024245	48.433	6.4746	41.245	0.020647	0.15445	0.6799				78.21	
31.981	470.000		143.520	258.34		0.024175	48.292	6.4557	41.365	0.020707	0.15490	0.6780				77.98	
32.000	470.272		143.534	258.36		0.024170	48.282	6.4543	41.374	0.020712	0.15493	0.6778				77.96	
32.322	475.000		143.772	258.79		0.024079	48.100	6.4300	41.531	0.020790	0.15552	0.6753				77.67	
32.480	477.328		143.889	259.00		0.024034	48.010	6.4180	41.609	0.020829	0.15581	0.6740				77.52	
32.631	479.552		144.000	259.20		0.023990	47.924	6.4065	41.683	0.020867	0.15609	0.6728				77.39	
32.662	480.000		144.022	259.24		0.023982	47.906	6.4041	41.698	0.020874	0.15615	0.6726				77.36	
33.000	484.969		144.269	259.68		0.023885	47.713	6.3783	41.867	0.020959	0.15678	0.6698				77.05	
33.002	485.000		144.270	259.69		0.023884	47.712	6.3782	41.868	0.020959	0.15679	0.6698				77.04	
33.242	488.528		144.444	260.00		0.023815	47.574	6.3597	41.990	0.021020	0.15724	0.6679				76.82	
33.342	490.000		144.517	260.13		0.023787	47.516	6.3520	42.041	0.021045	0.15743	0.6671				76.73	
33.683	495.000		144.761	260.57		0.023688	47.320	6.3257	42.215	0.021133	0.15808	0.6643				76.41	
34.000	499.664		144.987	260.98		0.023596	47.135	6.3011	42.381	0.021216	0.15870	0.6617				76.11	

TABLE 3 CONTINUED

SATURATED LIQUID OXYGEN

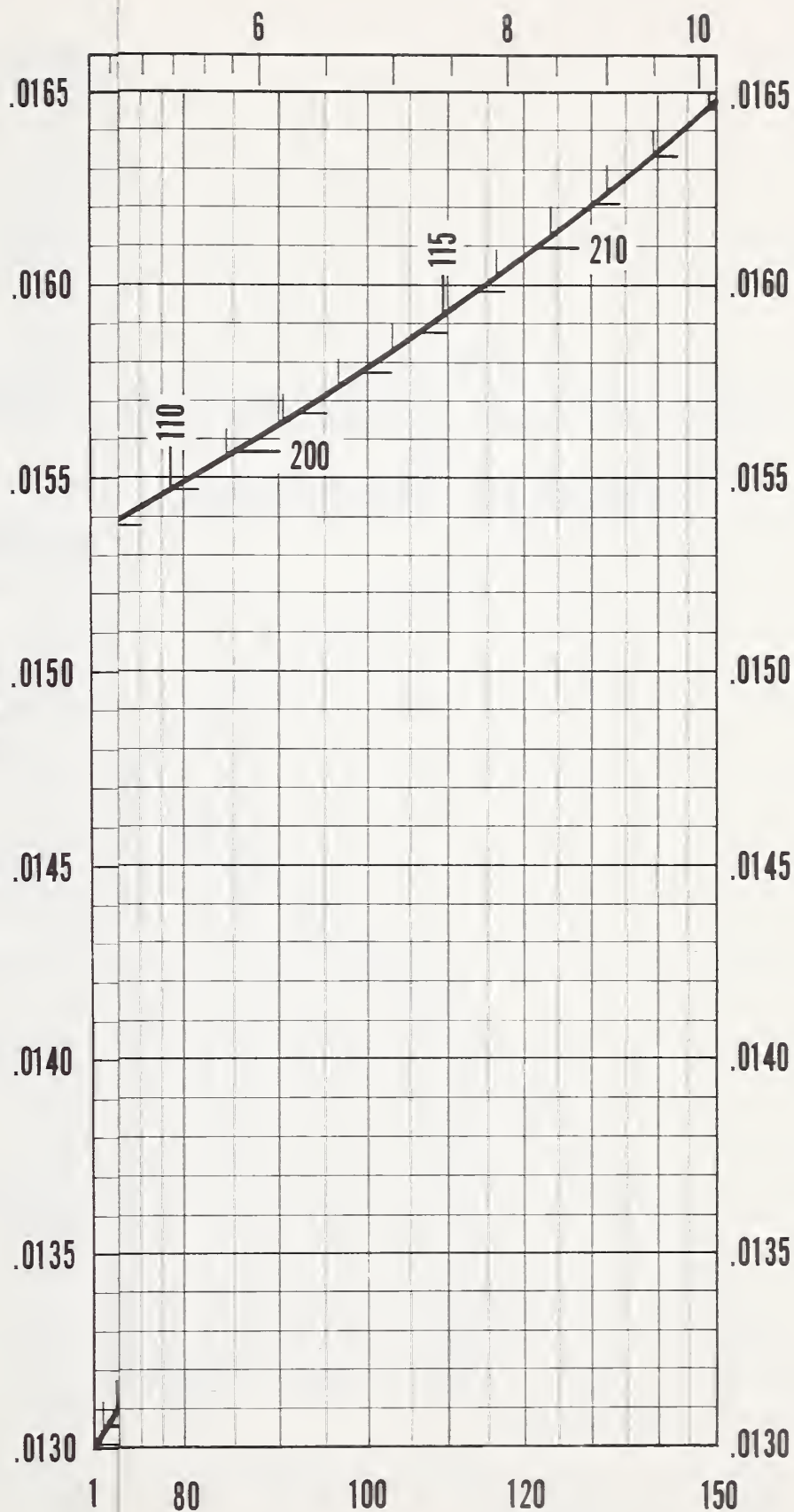
PRESSURE		TEMPERATURE		DENSITY		LB/GAL	CM ³ /GRAM-MOLE	VOLUME		GAL/LB	LIQ VOLUME CORRECTION FACTOR		DENSITY RATIO	
ATM	PSIA	KELVIN	RANKINE	GRAM-MOLE/CM ³	LB/FT ³			FT ³ /LB	CM ³ /GRAM-MOLE		LIQ VOLUME CORRECTION FACTOR	NTP (70°F) VOLUME CORRECTION FACTOR*	FT ³ /GAL	
34.018	499.925	145.000	261.00	0.023591	47.125	6.2997	42.390	0.021220	42.390	0.15874	0.6616		76.10	
34.023	500.000	145.004	261.01	0.023589	47.122	6.2993	42.393	0.021222	42.393	0.15875	0.6615		76.09	
34.363	505.000	145.244	261.44	0.023489	46.932	6.2727	42.572	0.021312	42.572	0.15942	0.6587		75.77	
34.703	510.000	145.483	261.87	0.023389	46.722	6.2459	42.755	0.021403	42.755	0.16011	0.6559		75.45	
34.807	511.521	145.556	262.00	0.023358	46.661	6.2377	42.811	0.021431	42.811	0.16032	0.6551		75.35	
35.000	514.360	145.690	262.24	0.023301	46.546	6.2223	42.917	0.021484	42.917	0.16071	0.6535		75.16	
35.044	515.000	145.720	262.30	0.023288	46.520	6.2189	42.941	0.021496	42.941	0.16080	0.6531		75.12	
35.384	520.000	145.956	262.72	0.023186	46.317	6.1917	43.129	0.021590	43.129	0.16151	0.6502		74.79	
35.448	520.943	146.000	262.80	0.023167	46.278	6.1855	43.165	0.021608	43.165	0.16164	0.6497		74.73	
35.610	523.319	146.111	263.00	0.023118	46.181	6.1735	43.256	0.021654	43.256	0.16198	0.6483		74.57	
35.724	525.000	146.189	263.14	0.023083	46.112	6.1643	43.321	0.021686	43.321	0.16223	0.6474		74.46	
36.000	529.056	146.378	263.48	0.022999	45.944	6.1419	43.479	0.021766	43.479	0.16282	0.6450		74.19	
36.064	530.000	146.421	263.56	0.022980	45.905	6.1366	43.516	0.021784	43.516	0.16296	0.6445		74.13	
36.404	535.000	146.652	263.97	0.022875	45.697	6.1087	43.715	0.021884	43.715	0.16370	0.6415		73.79	
36.427	535.324	146.667	264.00	0.022869	45.683	6.1069	43.728	0.021890	43.728	0.16375	0.6413		73.77	
36.745	540.000	146.880	264.38	0.022770	45.486	6.0806	43.917	0.021985	43.917	0.16446	0.6386		73.45	
36.923	542.627	147.000	264.60	0.022714	45.375	6.0657	44.025	0.022039	44.025	0.16486	0.6370		73.27	
37.000	543.752	147.051	264.69	0.022690	45.327	6.0593	44.071	0.022062	44.071	0.16504	0.6363		73.19	
37.085	545.000	147.108	264.79	0.022664	45.274	6.0522	44.123	0.022088	44.123	0.16523	0.6356		73.11	
37.258	547.539	147.222	265.00	0.022609	45.165	6.0377	44.229	0.022141	44.229	0.16563	0.6341		72.93	
37.425	550.000	147.333	265.20	0.022556	45.059	6.0235	44.333	0.022193	44.333	0.16602	0.6326		72.76	
37.765	555.000	147.557	265.60	0.022448	44.842	5.9945	44.548	0.022300	44.548	0.16682	0.6295		72.41	
38.000	558.448	147.710	265.88	0.022372	44.691	5.9744	44.698	0.022376	44.698	0.16738	0.6274		72.17	
38.103	559.968	147.778	266.00	0.022339	44.624	5.9654	44.765	0.022409	44.765	0.16763	0.6265		72.06	
38.106	560.000	147.779	266.00	0.022338	44.623	5.9652	44.765	0.022410	44.765	0.16764	0.6265		72.06	
38.446	565.000	148.000	266.40	0.022227	44.401	5.9356	44.990	0.022522	44.990	0.16848	0.6233		71.70	
38.786	570.000	148.219	266.79	0.022115	44.177	5.9056	45.219	0.022636	45.219	0.16933	0.6202		71.34	
38.964	572.616	148.333	267.00	0.022055	44.058	5.8897	45.340	0.022697	45.340	0.16979	0.6185		71.14	
39.000	573.144	148.356	267.04	0.022043	44.034	5.8865	45.365	0.022710	45.365	0.16988	0.6182		71.11	
39.126	575.000	148.437	267.19	0.022001	43.950	5.8752	45.452	0.022753	45.452	0.17021	0.6170		70.97	
39.467	580.000	148.653	267.58	0.021886	43.719	5.8444	45.692	0.022873	45.692	0.17110	0.6138		70.60	
39.807	585.000	148.868	267.96	0.021769	43.486	5.8132	45.937	0.022996	45.937	0.17202	0.6105		70.22	
39.840	585.487	148.889	268.00	0.021757	43.463	5.8102	45.961	0.023008	45.961	0.17211	0.6102		70.18	
40.000	587.840	148.989	268.18	0.021702	43.352	5.7953	46.079	0.023067	46.079	0.17255	0.6086		70.00	
40.017	588.000	149.000	268.20	0.021696	43.340	5.7937	46.092	0.023073	46.092	0.17260	0.6084		69.98	
40.147	590.000	149.081	268.35	0.021650	43.249	5.7815	46.189	0.023122	46.189	0.17296	0.6072		69.84	
40.487	595.000	149.293	268.73	0.021530	43.008	5.7494	46.447	0.023251	46.447	0.17393	0.6038		69.45	
40.731	598.585	149.444	269.00	0.021442	42.833	5.7260	46.637	0.023346	46.637	0.17464	0.6013		69.17	
40.827	600.000	149.504	269.11	0.021407	42.764	5.7167	46.713	0.023384	46.713	0.17493	0.6004		69.05	
41.000	602.536	149.610	269.30	0.021345	42.638	5.6999	46.850	0.023453	46.850	0.17544	0.5986		68.85	
41.168	605.000	149.713	269.48	0.021283	42.515	5.6834	46.986	0.023521	46.986	0.17595	0.5969		68.65	
41.508	610.000	149.921	269.86	0.021156	42.262	5.6496	47.268	0.023662	47.268	0.17700	0.5933		68.24	
41.638	611.917	150.000	270.00	0.021107	42.163	5.6364	47.378	0.023717	47.378	0.17742	0.5919		68.08	
41.848	615.000	150.127	270.23	0.021027	42.004	5.6151	47.558	0.023807	47.558	0.17809	0.5897		67.83	
42.000	617.232	150.219	270.39	0.020968	41.887	5.5995	47.691	0.023874	47.691	0.17859	0.5880		67.64	

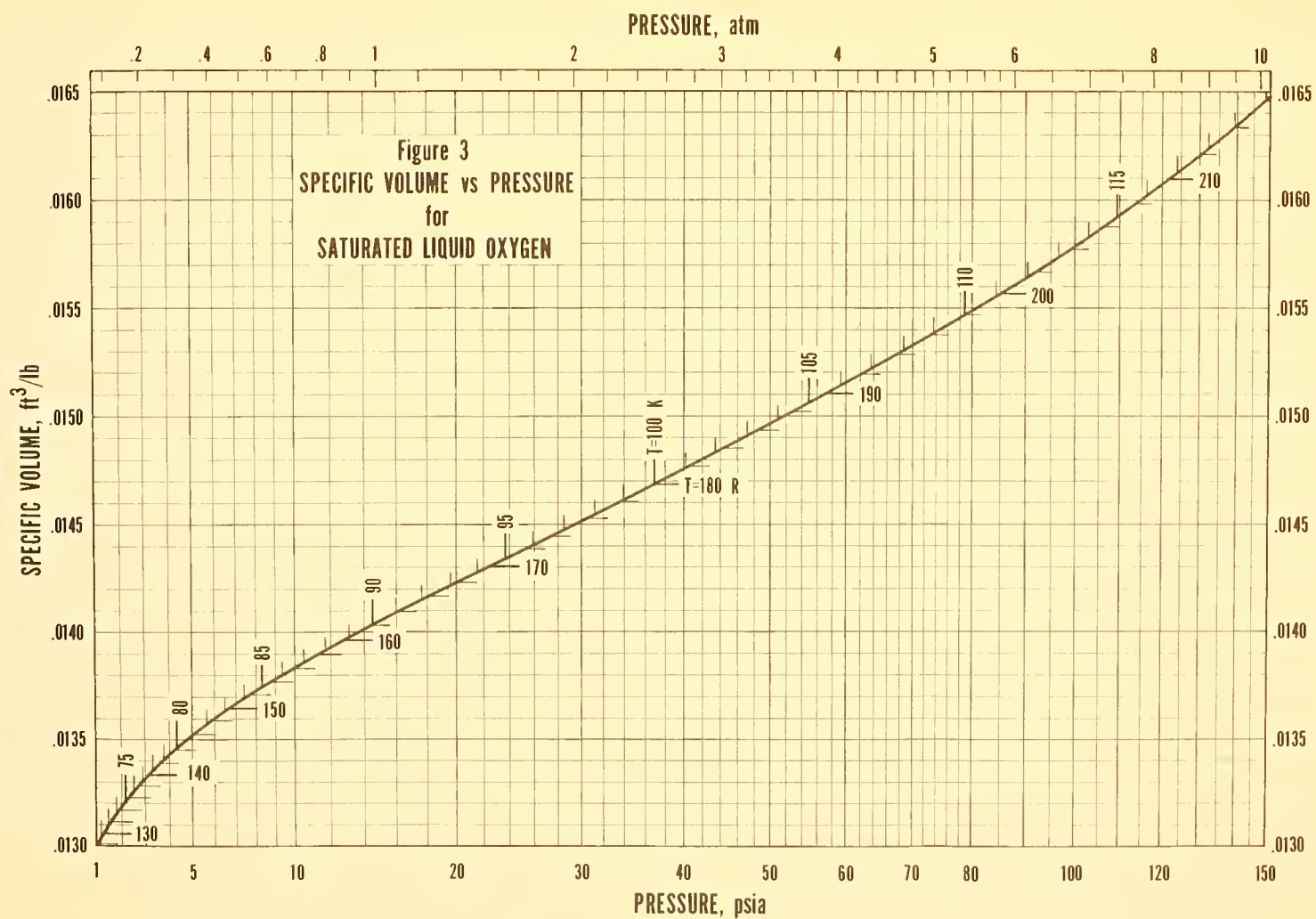
TABLE 3 CONTINUED

SATURATED LIQUID OXYGEN

PRESSURE			TEMPERATURE		DENSITY		VOLUME		LIQ VOLUME CORRECTION FACTOR		DENSITY RATIO NTP (70°F) VOLUME CORRECTION FACTOR*	
ATM	PSIA	KELVIN	RANKINE	GRAM-MOLE/CM ³	LB/FT ³	LB/GAL	CM ³ /GRAM-MOLE	FT ³ /LB	GAL/LB			
42.188	620.000	150.332	270.60	0.020895	41.740	5.5799	47.858	0.023958	0.17922	0.5860	67.40	
42.529	625.000	150.536	270.96	0.020760	41.471	5.5439	48.169	0.024113	0.18038	0.5822	66.97	
42.562	625.487	150.556	271.00	0.020747	41.445	5.5404	48.200	0.024128	0.18049	0.5818	66.92	
42.869	630.000	150.738	271.33	0.020623	41.196	5.5071	48.491	0.024274	0.18158	0.5783	66.52	
43.000	631.928	150.816	271.47	0.020569	41.088	5.4927	48.618	0.024338	0.18206	0.5768	66.35	
43.209	635.000	150.939	271.69	0.020481	40.914	5.4694	48.825	0.024441	0.18283	0.5744	66.07	
43.312	636.518	151.000	271.80	0.020438	40.827	5.4578	48.929	0.024493	0.18322	0.5732	65.93	
43.502	639.301	151.111	272.00	0.020357	40.666	5.4362	49.123	0.024591	0.18395	0.5709	65.67	
43.549	640.000	151.139	272.05	0.020337	40.625	5.4308	49.172	0.024615	0.18414	0.5703	65.60	
43.889	645.000	151.337	272.41	0.020188	40.328	5.3910	49.535	0.024797	0.18549	0.5662	65.12	
44.000	646.624	151.402	272.52	0.020139	40.229	5.3779	49.656	0.024858	0.18595	0.5648	64.96	
44.230	650.000	151.535	272.76	0.020035	40.021	5.3501	49.914	0.024987	0.18691	0.5619	64.63	
44.459	653.365	151.667	273.00	0.019929	39.810	5.3218	50.179	0.025119	0.18791	0.5589	64.28	
44.570	655.000	151.731	273.12	0.019876	39.705	5.3078	50.311	0.025186	0.18840	0.5574	64.11	
44.910	660.000	151.925	273.47	0.019713	39.378	5.2641	50.729	0.025395	0.18997	0.5528	63.59	
45.000	661.320	151.977	273.56	0.019668	39.290	5.2523	50.843	0.025452	0.19039	0.5516	63.44	
45.041	661.925	152.000	273.60	0.019648	39.249	5.2468	50.896	0.025478	0.19059	0.5510	63.38	
45.250	665.000	152.119	273.81	0.019543	39.039	5.2187	51.170	0.025616	0.19162	0.5481	63.04	
45.433	667.686	152.222	274.00	0.019449	38.851	5.1936	51.418	0.025739	0.19254	0.5454	62.74	
45.591	670.000	152.311	274.16	0.019366	38.685	5.1715	51.638	0.025850	0.19337	0.5431	62.47	
45.931	675.000	152.502	274.50	0.019181	38.316	5.1221	52.135	0.026099	0.19523	0.5379	61.87	
46.000	676.016	152.544	274.57	0.019142	38.239	5.1118	52.241	0.026151	0.19563	0.5368	61.75	
46.271	680.000	152.692	274.85	0.018987	37.928	5.0703	52.669	0.026166	0.19723	0.5325	61.25	
46.420	682.271	152.778	275.00	0.018895	37.745	5.0458	52.924	0.026494	0.19819	0.5299	60.95	
46.611	685.000	152.881	275.19	0.018782	37.519	5.0155	53.243	0.026653	0.19938	0.5267	60.58	
46.828	688.180	153.000	275.40	0.018645	37.245	4.9789	53.634	0.026849	0.20085	0.5229	60.14	
46.952	690.000	153.068	275.52	0.018564	37.083	4.9573	53.868	0.026966	0.20172	0.5206	59.88	
47.000	690.712	153.095	275.57	0.018532	37.019	4.9487	53.962	0.027013	0.20207	0.5197	59.78	
47.292	695.000	153.254	275.86	0.018330	36.617	4.8950	54.555	0.027310	0.20429	0.5141	59.13	
47.436	697.126	153.333	276.00	0.018225	36.407	4.8670	54.869	0.027467	0.20547	0.5111	58.79	
47.632	700.000	153.440	276.19	0.018077	36.112	4.8274	55.318	0.027692	0.20715	0.5070	58.31	
47.972	705.000	153.624	276.52	0.017800	35.557	4.7533	56.181	0.028124	0.21038	0.4992	57.42	
48.000	705.408	153.639	276.55	0.017776	35.509	4.7468	56.257	0.028162	0.21067	0.4985	57.34	
48.312	710.000	153.807	276.85	0.017488	34.935	4.6702	57.181	0.028624	0.21413	0.4905	56.41	
48.466	712.261	153.889	277.00	0.017333	34.625	4.6287	57.693	0.028881	0.21604	0.4861	55.91	
48.653	715.000	153.988	277.18	0.017130	34.218	4.5743	58.378	0.029224	0.21861	0.4804	55.25	
48.675	715.323	154.000	277.20	0.017104	34.168	4.5676	58.465	0.029267	0.21993	0.4797	55.17	
48.993	720.000	154.169	277.50	0.016696	33.351	4.4584	59.896	0.029984	0.22429	0.4682	53.85	
49.000	720.104	154.173	277.51	0.016685	33.331	4.4557	59.933	0.030002	0.22443	0.4679	53.82	
49.333	725.000	154.349	277.83	0.016118	32.198	4.3043	62.041	0.031058	0.23233	0.4520	51.99	
49.516	727.684	154.444	278.00	0.015677	31.316	4.1863	63.789	0.031933	0.23887	0.4396	50.57	
49.673	730.000	154.527	278.15	0.015071	30.106	4.0246	66.353	0.033216	0.24847	0.4227	48.61	
49.767	731.379	154.576	278.24	0.013630	27.228	3.6398	73.368	0.036727	0.27474	0.3822	43.97	

SPECIFIC VOLUME, ft^3/lb





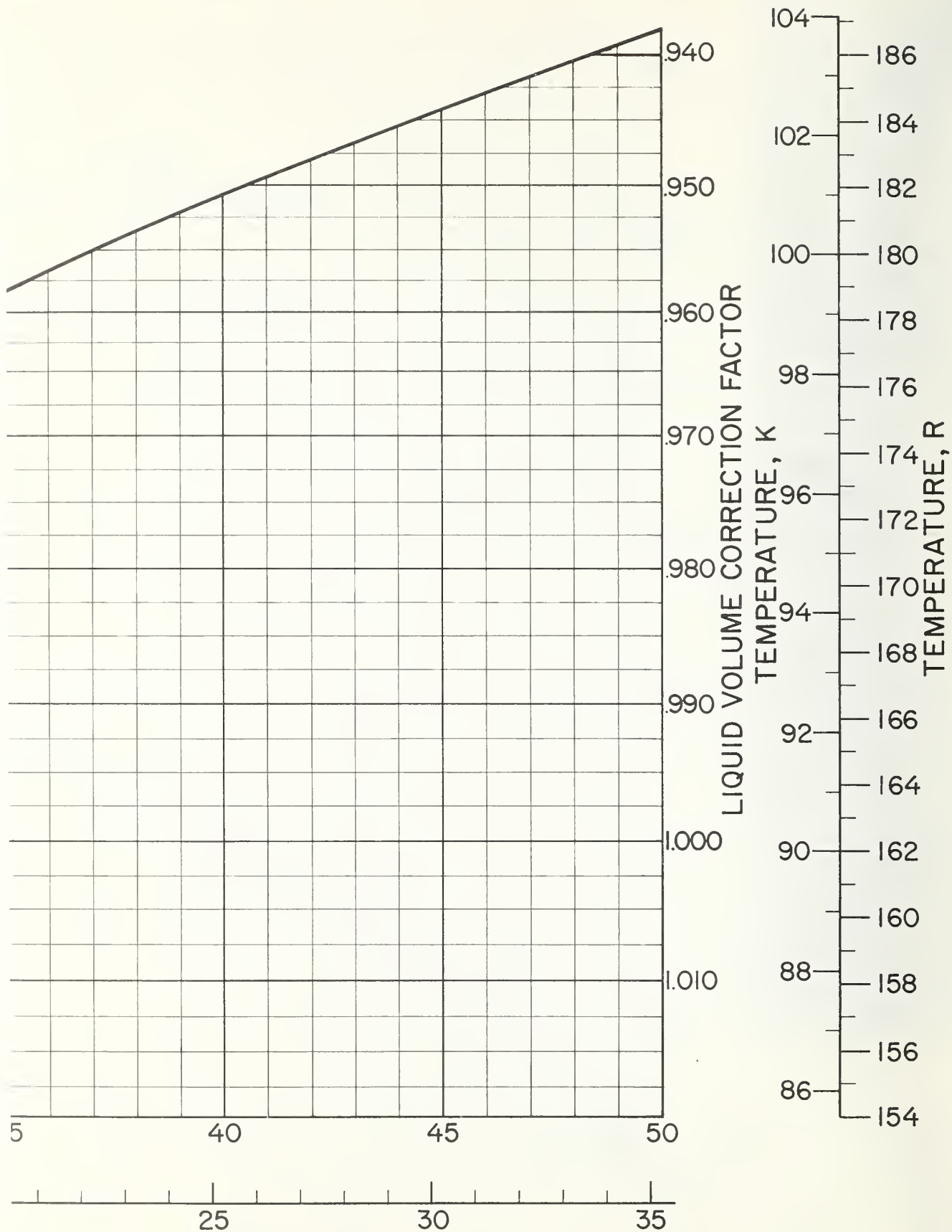


TABLE 4

DENSITY OF COMPRESSED LIQUID OXYGEN

		TABLE ENTRIES												
1. TEMPERATURE, K 2. TEMPERATURE, °F 3. VAPOR PRESSURE, PSIA		1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL												
PSIA ATM.	12.000 0.817	14.696 1.000	25.000 1.701	50.000 3.402	75.000 5.103	100.000 6.805	150.000 10.207	200.000 13.609	250.000 17.011	300.000 20.414	350.000 23.816	400.000 27.218	450.000 30.621	
88.0 158.40 11.625	1.0094 116.07 9.6092	1.0095 116.07 9.6095	1.0096 116.09 9.6108	1.0099 116.12 9.6139	1.0103 116.16 9.6169	1.0106 116.20 9.6200	1.0112 116.27 9.6260	1.0118 116.34 9.6321	1.0125 116.41 9.6381	1.0131 116.49 9.6440	1.0137 116.56 9.6500	1.0143 116.63 9.6559	1.0150 116.70 9.6618	
88.1 158.58 11.754	1.0090 116.02 9.6051	1.0090 116.02 9.6054	1.0092 116.04 9.6067	1.0095 116.07 9.6098	1.0098 116.11 9.6128	1.0101 116.15 9.6159	1.0108 116.22 9.6219	1.0114 116.29 9.6280	1.0121 116.37 9.6340	1.0127 116.44 9.6400	1.0133 116.51 9.6460	1.0139 116.58 9.6519	1.0145 116.65 9.6579	
88.2 158.76 11.884	1.0086 115.97 9.6010	1.0086 115.97 9.6013	1.0087 115.99 9.6026	1.0091 116.02 9.6056	1.0094 116.06 9.6087	1.0097 116.10 9.6118	1.0104 116.17 9.6179	1.0110 116.24 9.6239	1.0116 116.32 9.6300	1.0123 116.39 9.6360	1.0129 116.46 9.6419	1.0135 116.53 9.6479	1.0141 116.60 9.6538	
88.3 158.94 12.015		1.0082 115.92 9.5972	1.0083 115.94 9.5985	1.0086 115.97 9.6015	1.0090 116.01 9.6046	1.0093 116.05 9.6077	1.0099 116.12 9.6138	1.0106 116.19 9.6199	1.0112 116.27 9.6259	1.0118 116.34 9.6319	1.0125 116.41 9.6379	1.0131 116.48 9.6439	1.0137 116.56 9.6498	
88.4 159.12 12.147		1.0077 115.87 9.5931	1.0079 115.89 9.5943	1.0082 115.92 9.5974	1.0085 115.96 9.6005	1.0089 116.00 9.6036	1.0095 116.07 9.6097	1.0101 116.15 9.6158	1.0108 116.22 9.6219	1.0114 116.29 9.6279	1.0120 116.36 9.6339	1.0127 116.44 9.6398	1.0133 116.51 9.6458	
88.5 159.30 12.281		1.0073 115.82 9.5889	1.0074 115.84 9.5902	1.0078 115.87 9.5933	1.0081 115.91 9.5964	1.0084 115.95 9.5995	1.0091 116.02 9.6056	1.0097 116.10 9.6117	1.0103 116.17 9.6178	1.0110 116.24 9.6238	1.0116 116.32 9.6298	1.0122 116.39 9.6358	1.0129 116.46 9.6418	
88.6 159.48 12.415		1.0069 115.77 9.5848	1.0070 115.79 9.5861	1.0073 115.82 9.5892	1.0077 115.86 9.5923	1.0080 115.90 9.5954	1.0086 115.97 9.6015	1.0093 116.05 9.6076	1.0099 116.12 9.6137	1.0106 116.19 9.6198	1.0112 116.27 9.6258	1.0118 116.34 9.6318	1.0124 116.41 9.6378	
88.7 159.66 12.551		1.0064 115.72 9.5807	1.0066 115.74 9.5820	1.0069 115.77 9.5851	1.0072 115.81 9.5882	1.0076 115.85 9.5913	1.0082 115.92 9.5974	1.0089 116.00 9.6036	1.0095 116.07 9.6097	1.0101 116.14 9.6157	1.0108 116.22 9.6218	1.0114 116.29 9.6278	1.0120 116.36 9.6338	
88.8 159.84 12.688		1.0060 115.67 9.5766	1.0061 115.69 9.5778	1.0065 115.72 9.5810	1.0068 115.76 9.5841	1.0071 115.80 9.5872	1.0078 115.87 9.5933	1.0084 115.95 9.5995	1.0091 116.02 9.6056	1.0097 116.10 9.6117	1.0103 116.17 9.6177	1.0110 116.24 9.6238	1.0116 116.31 9.6298	
88.9 160.02 12.826		1.0056 115.62 9.5724	1.0057 115.64 9.5737	1.0060 115.67 9.5768	1.0064 115.71 9.5800	1.0067 115.75 9.5831	1.0073 115.82 9.5893	1.0080 115.90 9.5954	1.0086 115.97 9.6015	1.0093 116.05 9.6076	1.0099 116.12 9.6137	1.0106 116.19 9.6197	1.0112 116.27 9.6257	
89.0 160.20 12.965		1.0051 115.57 9.5683	1.0053 115.59 9.5696	1.0056 115.63 9.5727	1.0059 115.66 9.5758	1.0063 115.70 9.5790	1.0069 115.78 9.5852	1.0076 115.85 9.5913	1.0082 115.92 9.5975	1.0089 116.00 9.6036	1.0095 116.07 9.6097	1.0101 116.14 9.6157	1.0108 116.22 9.6217	
89.1 160.38 13.105		1.0047 115.52 9.5641	1.0048 115.54 9.5654	1.0052 115.58 9.5686	1.0055 115.61 9.5717	1.0058 115.65 9.5748	1.0065 115.73 9.5811	1.0071 115.80 9.5872	1.0078 115.87 9.5934	1.0084 115.95 9.5995	1.0091 116.02 9.6056	1.0097 116.10 9.6117	1.0103 116.17 9.6177	
89.2 160.56 13.247		1.0043 115.47 9.5600	1.0044 115.49 9.5613	1.0047 115.53 9.5645	1.0051 115.56 9.5676	1.0054 115.60 9.5707	1.0061 115.68 9.5770	1.0067 115.75 9.5832	1.0074 115.83 9.5893	1.0080 115.90 9.5955	1.0086 115.97 9.6016	1.0093 116.05 9.6076	1.0099 116.12 9.6137	
89.3 160.74 13.389		1.0038 115.42 9.5559	1.0040 115.44 9.5572	1.0043 115.48 9.5603	1.0046 115.51 9.5635	1.0050 115.55 9.5666	1.0056 115.63 9.5729	1.0063 115.70 9.5791	1.0069 115.78 9.5853	1.0076 115.85 9.5914	1.0082 115.92 9.5975	1.0089 116.00 9.6036	1.0095 116.07 9.6097	
89.4 160.92 13.533		1.0034 115.37 9.5517	1.0035 115.39 9.5530	1.0039 115.43 9.5562	1.0042 115.46 9.5593	1.0045 115.50 9.5625	1.0052 115.58 9.5687	1.0058 115.65 9.5750	1.0065 115.73 9.5812	1.0071 115.80 9.5873	1.0078 115.88 9.5935	1.0084 115.95 9.5996	1.0091 116.02 9.6056	
89.5 161.10 13.678		1.0030 115.32 9.5476	1.0031 115.34 9.5489	1.0034 115.38 9.5520	1.0038 115.41 9.5552	1.0041 115.45 9.5584	1.0048 115.53 9.5646	1.0054 115.60 9.5709	1.0061 115.68 9.5771	1.0067 115.75 9.5833	1.0074 115.83 9.5894	1.0080 115.90 9.5955	1.0086 115.97 9.6016	
89.6 161.28 13.824		1.0025 115.27 9.5434	1.0027 115.29 9.5447	1.0030 115.33 9.5479	1.0033 115.36 9.5511	1.0037 115.40 9.5542	1.0043 115.48 9.5605	1.0050 115.55 9.5668	1.0056 115.63 9.5730	1.0063 115.70 9.5792	1.0069 115.78 9.5854	1.0076 115.85 9.5915	1.0082 115.93 9.5976	
89.7 161.46 13.972		1.0021 115.22 9.5393	1.0022 115.24 9.5406	1.0026 115.28 9.5438	1.0029 115.31 9.5469	1.0032 115.35 9.5501	1.0039 115.43 9.5564	1.0046 115.50 9.5627	1.0052 115.58 9.5689	1.0059 115.65 9.5751	1.0065 115.73 9.5813	1.0072 115.80 9.5875	1.0078 115.88 9.5936	
89.8 161.64 14.120		1.0017 115.17 9.5351	1.0018 115.19 9.5364	1.0021 115.23 9.5396	1.0025 115.26 9.5428	1.0028 115.30 9.5460	1.0035 115.38 9.5523	1.0041 115.45 9.5586	1.0048 115.53 9.5648	1.0054 115.61 9.5711	1.0061 115.68 9.5773	1.0067 115.75 9.5834	1.0074 115.83 9.5895	
89.9 161.82 14.270		1.0012 115.12 9.5310	1.0014 115.14 9.5323	1.0017 115.18 9.5355	1.0020 115.21 9.5387	1.0024 115.25 9.5418	1.0030 115.33 9.5482	1.0037 115.40 9.5545	1.0044 115.48 9.5608	1.0050 115.56 9.5670	1.0057 115.63 9.5732	1.0063 115.71 9.5794	1.0070 115.78 9.5855	

Figure 4

LIQUID VOLUME CORRECTION FACTOR
for
SATURATED LIQUID OXYGEN

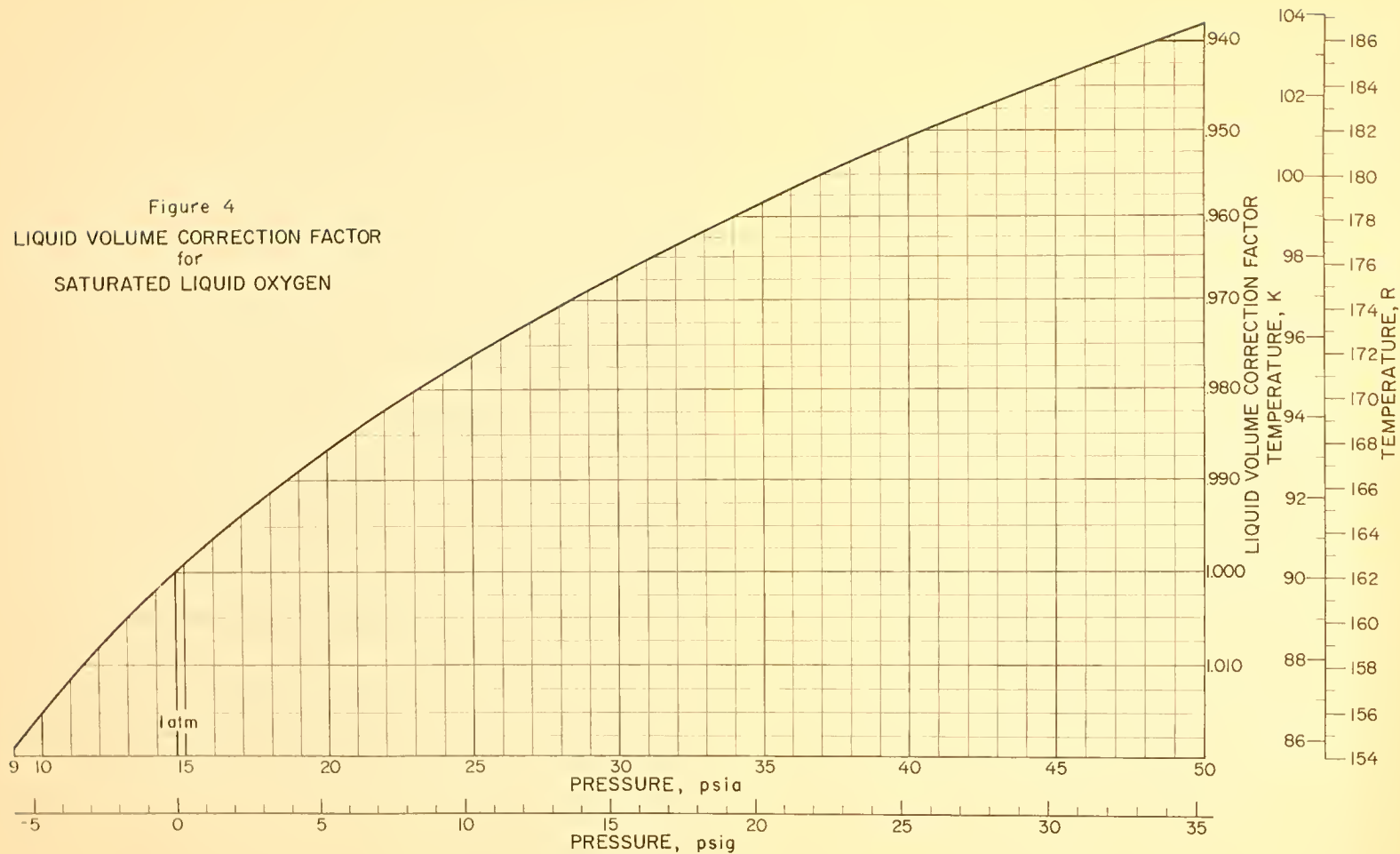


TABLE 4 - CONTINUED

DENSITY OF COMPRESSED LIQUID OXYGEN - CONTINUED

		TABLE ENTRIES												
1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA		1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL												
PSIA ATM.	12.000 0.817	14.696 1.000	25.000 1.701	50.000 3.402	75.000 5.103	100.000 6.805	150.000 10.207	200.000 13.609	250.000 17.011	300.000 20.414	350.000 23.916	400.000 27.218	450.000 30.621	
90.0 162.00 14.421		1.0008 115.07 9.5268	1.0009 115.09 9.5281	1.0013 115.13 9.5313	1.0016 115.16 9.5345	1.0019 115.20 9.5377	1.0026 115.28 9.5441	1.0033 115.36 9.5504	1.0039 115.43 9.5567	1.0046 115.51 9.5629	1.0052 115.58 9.5691	1.0059 115.66 9.5753	1.0065 115.73 9.5815	
90.1 162.18 14.573		1.0004 115.02 9.5226	1.0005 115.04 9.5240	1.0008 115.07 9.5272	1.0012 115.11 9.5304	1.0015 115.15 9.5336	1.0022 115.23 9.5399	1.0028 115.31 9.5463	1.0035 115.38 9.5526	1.0042 115.46 9.5588	1.0048 115.53 9.5651	1.0055 115.61 9.5713	1.0061 115.68 9.5774	
90.2 162.36 14.727			1.0001 114.99 9.5198	1.0004 115.02 9.5230	1.0007 115.06 9.5262	1.0011 115.10 9.5294	1.0017 115.18 9.5358	1.0024 115.26 9.5422	1.0031 115.33 9.5485	1.0037 115.41 9.5547	1.0044 115.48 9.5610	1.0050 115.56 9.5672	1.0057 115.63 9.5734	
90.3 162.54 14.882			0.9996 114.94 9.5156	1.0000 114.97 9.5189	1.0003 115.01 9.5221	1.0006 115.05 9.5253	1.0013 115.13 9.5317	1.0020 115.21 9.5380	1.0026 115.28 9.5444	1.0033 115.36 9.5507	1.0040 115.43 9.5569	1.0046 115.51 9.5632	1.0053 115.58 9.5693	
90.4 162.72 15.038			0.9992 114.89 9.5115	0.9995 114.92 9.5147	0.9999 114.96 9.5179	1.0002 115.00 9.5211	1.0009 115.08 9.5276	1.0015 115.16 9.5339	1.0022 115.23 9.5403	1.0029 115.31 9.5466	1.0035 115.39 9.5529	1.0042 115.46 9.5591	1.0048 115.54 9.5653	
90.5 162.90 15.195			0.9987 114.83 9.5073	0.9991 114.87 9.5105	0.9994 114.91 9.5138	0.9998 114.95 9.5170	1.0004 115.03 9.5234	1.0011 115.11 9.5298	1.0018 115.18 9.5362	1.0024 115.26 9.5425	1.0031 115.34 9.5488	1.0038 115.41 9.5550	1.0044 115.49 9.5613	
90.6 163.08 15.353			0.9983 114.78 9.5031	0.9986 114.82 9.5064	0.9990 114.86 9.5096	0.9993 114.90 9.5128	1.0000 114.98 9.5193	1.0007 115.06 9.5257	1.0013 115.13 9.5321	1.0020 115.21 9.5384	1.0027 115.29 9.5447	1.0033 115.36 9.5510	1.0040 115.44 9.5572	
90.7 163.26 15.513			0.9979 114.73 9.4989	0.9982 114.77 9.5022	0.9985 114.81 9.5055	0.9989 114.85 9.5087	0.9996 114.93 9.5151	1.0002 115.01 9.5216	1.0009 115.08 9.5280	1.0016 115.16 9.5343	1.0022 115.24 9.5406	1.0029 115.31 9.5469	1.0036 115.39 9.5532	
90.8 163.44 15.674			0.9974 114.68 9.4948	0.9978 114.72 9.4980	0.9981 114.76 9.5013	0.9984 114.80 9.5045	0.9991 114.88 9.5110	0.9998 114.96 9.5174	1.0005 115.03 9.5238	1.0011 115.11 9.5302	1.0018 115.19 9.5365	1.0025 115.26 9.5428	1.0031 115.34 9.5491	
90.9 163.62 15.836			0.9970 114.63 9.4906	0.9973 114.67 9.4939	0.9977 114.71 9.4971	0.9980 114.75 9.5004	0.9987 114.83 9.5069	0.9994 114.91 9.5133	1.0000 114.99 9.5197	1.0007 115.06 9.5261	1.0014 115.14 9.5325	1.0020 115.22 9.5388	1.0027 115.29 9.5450	
91.0 163.80 16.000			0.9965 114.58 9.4864	0.9969 114.62 9.4897	0.9972 114.66 9.4930	0.9976 114.70 9.4962	0.9983 114.78 9.5027	0.9989 114.86 9.5092	0.9996 114.94 9.5156	1.0003 115.01 9.5220	1.0010 115.09 9.5284	1.0016 115.17 9.5347	1.0023 115.24 9.5410	
91.1 163.98 16.165			0.9961 114.53 9.4822	0.9965 114.57 9.4855	0.9968 114.61 9.4888	0.9971 114.65 9.4921	0.9978 114.73 9.4986	0.9985 114.81 9.5051	0.9992 114.89 9.5115	0.9999 114.96 9.5179	1.0005 115.04 9.5243	1.0012 115.12 9.5306	1.0019 115.19 9.5369	
91.2 164.16 16.331			0.9957 114.48 9.4780	0.9960 114.52 9.4813	0.9964 114.56 9.4846	0.9967 114.60 9.4879	0.9974 114.68 9.4944	0.9981 114.76 9.5009	0.9987 114.84 9.5074	0.9994 114.91 9.5138	1.0001 115.00 9.5202	1.0008 115.07 9.5265	1.0014 115.14 9.5329	
91.3 164.34 16.499			0.9952 114.43 9.4738	0.9956 114.47 9.4771	0.9959 114.51 9.4804	0.9963 114.55 9.4837	0.9970 114.63 9.4903	0.9976 114.71 9.4968	0.9983 114.79 9.5033	0.9990 114.86 9.5097	0.9997 114.94 9.5161	1.0003 115.02 9.5225	1.0010 115.09 9.5288	
91.4 164.52 16.668			0.9948 114.38 9.4696	0.9951 114.42 9.4730	0.9955 114.46 9.4763	0.9958 114.50 9.4796	0.9965 114.58 9.4861	0.9972 114.66 9.4926	0.9979 114.74 9.4991	0.9986 114.81 9.5056	0.9992 114.89 9.5120	0.9999 114.97 9.5184	1.0006 115.05 9.5247	
91.5 164.70 16.838			0.9943 114.33 9.4654	0.9947 114.37 9.4688	0.9950 114.41 9.4721	0.9954 114.45 9.4754	0.9961 114.53 9.4820	0.9968 114.61 9.4885	0.9974 114.69 9.4950	0.9981 114.76 9.5015	0.9988 114.84 9.5079	0.9995 114.92 9.5143	1.0001 115.00 9.5207	
91.6 164.88 17.009			0.9939 114.28 9.4612	0.9943 114.32 9.4646	0.9946 114.36 9.4679	0.9949 114.40 9.4712	0.9956 114.48 9.4778	0.9963 114.56 9.4844	0.9970 114.64 9.4909	0.9977 114.71 9.4974	0.9984 114.79 9.5038	0.9990 114.87 9.5102	0.9997 114.95 9.5166	
91.7 165.06 17.182			0.9935 114.23 9.4570	0.9938 114.27 9.4604	0.9942 114.31 9.4637	0.9945 114.35 9.4670	0.9952 114.43 9.4736	0.9959 114.51 9.4802	0.9966 114.59 9.4867	0.9973 114.67 9.4932	0.9979 114.75 9.4997	0.9986 114.82 9.5061	0.9993 114.90 9.5125	
91.8 165.24 17.356			0.9930 114.18 9.4528	0.9934 114.22 9.4562	0.9937 114.26 9.4595	0.9941 114.30 9.4628	0.9948 114.38 9.4695	0.9955 114.46 9.4761	0.9961 114.54 9.4826	0.9968 114.62 9.4891	0.9975 114.69 9.4956	0.9982 114.77 9.5020	0.9989 114.85 9.5085	
91.9 165.42 17.532			0.9926 114.13 9.4486	0.9929 114.17 9.4520	0.9933 114.21 9.4553	0.9936 114.25 9.4587	0.9943 114.33 9.4653	0.9950 114.41 9.4719	0.9957 114.49 9.4785	0.9964 114.57 9.4850	0.9971 114.64 9.4915	0.9978 114.72 9.4980	0.9984 114.80 9.5044	

		TABLE ENTRIES												
1. TEMPERATURE, K 2. TEMPERATURE, °R 3. VAPOR PRESSURE, PSIA		1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL												
PSIA	ATM.	12.000	14.696	25.000	50.000	75.000	100.000	150.000	200.000	250.000	300.000	350.000	400.000	450.000
		0.817	1.000	1.701	3.402	5.103	6.805	10.207	13.609	17.011	20.414	23.816	27.218	30.621
92.0 165.60 17.709				0.9921 114.08 9.4444	0.9925 114.12 9.4478	0.9928 114.16 9.4511	0.9932 114.20 9.4545	0.9939 114.28 9.4611	0.9946 114.36 9.4678	0.9953 114.44 9.4743	0.9960 114.52 9.4809	0.9966 114.59 9.4874	0.9973 114.67 9.4939	0.9980 114.75 9.5003
92.1 165.78 17.587				0.9917 114.02 9.4402	0.9920 114.07 9.4436	0.9924 114.11 9.4469	0.9928 114.15 9.4503	0.9935 114.23 9.4570	0.9941 114.31 9.4636	0.9948 114.39 9.4702	0.9955 114.47 9.4768	0.9962 114.54 9.4833	0.9969 114.62 9.4898	0.9976 114.70 9.4962
92.2 165.96 19.966				0.9912 113.97 9.4360	0.9916 114.01 9.4394	0.9920 114.06 9.4427	0.9923 114.10 9.4461	0.9930 114.18 9.4528	0.9937 114.26 9.4594	0.9944 114.34 9.4660	0.9951 114.42 9.4726	0.9958 114.50 9.4792	0.9965 114.57 9.4857	0.9971 114.65 9.4921
92.3 166.14 18.247				0.9908 113.92 9.4318	0.9912 113.96 9.4352	0.9915 114.00 9.4385	0.9919 114.05 9.4419	0.9926 114.13 9.4486	0.9933 114.21 9.4553	0.9940 114.29 9.4619	0.9947 114.37 9.4685	0.9954 114.45 9.4750	0.9960 114.52 9.4816	0.9967 114.60 9.4880
92.4 166.32 18.430				0.9904 113.87 9.4275	0.9907 113.91 9.4309	0.9911 113.95 9.4343	0.9914 113.99 9.4377	0.9921 114.08 9.4444	0.9928 114.16 9.4511	0.9935 114.24 9.4577	0.9942 114.32 9.4644	0.9949 114.40 9.4709	0.9956 114.47 9.4775	0.9963 114.55 9.4840
92.5 166.50 18.614				0.9899 113.82 9.4233	0.9903 113.86 9.4267	0.9906 113.90 9.4301	0.9910 113.94 9.4335	0.9917 114.02 9.4402	0.9924 114.11 9.4469	0.9931 114.19 9.4536	0.9938 114.27 9.4602	0.9945 114.35 9.4668	0.9952 114.42 9.4733	0.9959 114.50 9.4799
92.6 166.68 18.799				0.9895 113.77 9.4191	0.9898 113.81 9.4225	0.9902 113.85 9.4259	0.9905 113.89 9.4293	0.9913 113.97 9.4361	0.9920 114.06 9.4428	0.9927 114.14 9.4494	0.9934 114.22 9.4561	0.9941 114.30 9.4627	0.9947 114.38 9.4692	0.9954 114.45 9.4758
92.7 166.86 18.985				0.9890 113.72 9.4149	0.9894 113.76 9.4183	0.9897 113.80 9.4217	0.9901 113.84 9.4251	0.9908 113.92 9.4319	0.9915 114.01 9.4386	0.9922 114.09 9.4453	0.9929 114.17 9.4519	0.9936 114.25 9.4586	0.9943 114.33 9.4651	0.9950 114.40 9.4717
92.8 167.04 19.173				0.9886 113.67 9.4106	0.9889 113.71 9.4141	0.9893 113.75 9.4175	0.9897 113.79 9.4209	0.9904 113.87 9.4277	0.9911 113.95 9.4344	0.9918 114.04 9.4411	0.9925 114.12 9.4478	0.9932 114.20 9.4544	0.9939 114.28 9.4610	0.9946 114.36 9.4676
92.9 167.22 19.363				0.9881 113.62 9.4064	0.9885 113.66 9.4098	0.9889 113.70 9.4133	0.9892 113.74 9.4167	0.9899 113.82 9.4235	0.9906 113.90 9.4302	0.9914 113.99 9.4370	0.9921 114.07 9.4436	0.9928 114.15 9.4503	0.9934 114.23 9.4569	0.9941 114.31 9.4635
93.0 167.40 19.554				0.9877 113.56 9.4022	0.9881 113.61 9.4056	0.9884 113.65 9.4090	0.9888 113.69 9.4125	0.9895 113.77 9.4193	0.9902 113.85 9.4261	0.9909 113.94 9.4328	0.9916 114.02 9.4395	0.9923 114.10 9.4462	0.9930 114.18 9.4528	0.9937 114.26 9.4594
93.1 167.58 19.746				0.9872 113.51 9.3979	0.9876 113.56 9.4014	0.9880 113.60 9.4048	0.9883 113.64 9.4082	0.9891 113.72 9.4151	0.9898 113.80 9.4219	0.9905 113.88 9.4286	0.9912 113.97 9.4353	0.9919 114.05 9.4420	0.9926 114.13 9.4487	0.9933 114.21 9.4553
93.2 167.76 19.939				0.9868 113.46 9.3937	0.9872 113.50 9.3971	0.9875 113.55 9.4006	0.9879 113.59 9.4040	0.9886 113.67 9.4109	0.9893 113.75 9.4177	0.9900 113.83 9.4245	0.9907 113.92 9.4312	0.9914 114.00 9.4379	0.9921 114.08 9.4445	0.9928 114.16 9.4512
93.3 167.94 20.135				0.9864 113.41 9.3894	0.9867 113.45 9.3929	0.9871 113.49 9.3964	0.9874 113.54 9.3998	0.9882 113.62 9.4067	0.9889 113.70 9.4135	0.9896 113.78 9.4203	0.9903 113.87 9.4270	0.9910 113.95 9.4337	0.9917 114.03 9.4404	0.9924 114.11 9.4470
93.4 168.12 20.331				0.9859 113.36 9.3852	0.9863 113.40 9.3887	0.9866 113.44 9.3921	0.9870 113.48 9.3956	0.9877 113.57 9.4025	0.9884 113.65 9.4093	0.9892 113.73 9.4161	0.9899 113.82 9.4229	0.9906 113.90 9.4296	0.9913 113.98 9.4363	0.9920 114.06 9.4429
93.5 168.30 20.529				0.9855 113.31 9.3809	0.9858 113.35 9.3844	0.9862 113.39 9.3879	0.9866 113.43 9.3914	0.9873 113.52 9.3983	0.9880 113.60 9.4051	0.9887 113.68 9.4119	0.9894 113.76 9.4187	0.9901 113.85 9.4255	0.9908 113.93 9.4322	0.9915 114.01 9.4388
93.6 168.48 20.729				0.9850 113.26 9.3767	0.9854 113.30 9.3802	0.9857 113.34 9.3836	0.9861 113.38 9.3871	0.9868 113.47 9.3940	0.9876 113.55 9.4009	0.9883 113.63 9.4078	0.9890 113.71 9.4146	0.9897 113.80 9.4213	0.9904 113.88 9.4280	0.9911 113.96 9.4347
93.7 168.66 20.930				0.9846 113.21 9.3724	0.9849 113.25 9.3759	0.9853 113.29 9.3794	0.9857 113.33 9.3829	0.9864 113.42 9.3898	0.9871 113.50 9.3967	0.9878 113.58 9.4036	0.9886 113.66 9.4104	0.9893 113.75 9.4172	0.9900 113.83 9.4239	0.9907 113.91 9.4306
93.8 168.84 21.132				0.9841 113.16 9.3681	0.9845 113.20 9.3717	0.9849 113.24 9.3752	0.9852 113.28 9.3787	0.9860 113.37 9.3856	0.9867 113.45 9.3925	0.9874 113.53 9.3994	0.9881 113.61 9.4062	0.9888 113.70 9.4130	0.9895 113.78 9.4197	0.9902 113.86 9.4265
93.9 169.02 21.336				0.9837 113.10 9.3639	0.9840 113.15 9.3674	0.9844 113.19 9.3709	0.9848 113.23 9.3744	0.9855 113.31 9.3814	0.9862 113.40 9.3883	0.9870 113.48 9.3952	0.9877 113.56 9.4020	0.9884 113.65 9.4088	0.9891 113.73 9.4156	0.9898 113.81 9.4223

1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA			TABLE ENTRIES											
			1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL											
PSIA	12.000	14.696	25.000	50.000	75.000	100.000	150.000	200.000	250.000	300.000	350.000	400.000	450.000	
ATM.	0.817	1.000	1.701	3.402	5.103	6.805	10.207	13.609	17.011	20.414	23.816	27.218	30.621	
94.0 169.20 21.542			0.9832 113.05 9.3596	0.9836 113.09 9.3631	0.9840 113.14 9.3667	0.9843 113.18 9.3702	0.9851 113.26 9.3772	0.9858 113.35 9.3841	0.9865 113.43 9.3910	0.9872 113.51 9.3979	0.9880 113.60 9.4047	0.9887 113.68 9.4115	0.9894 113.76 9.4182	
94.1 169.38 21.749			0.9828 113.00 9.3553	0.9831 113.04 9.3589	0.9835 113.08 9.3624	0.9839 113.13 9.3659	0.9846 113.21 9.3729	0.9854 113.30 9.3799	0.9861 113.38 9.3868	0.9868 113.46 9.3937	0.9875 113.55 9.4005	0.9882 113.63 9.4073	0.9889 113.71 9.4141	
94.2 169.56 21.957			0.9823 112.95 9.3511	0.9827 112.99 9.3546	0.9831 113.03 9.3581	0.9834 113.08 9.3617	0.9842 113.16 9.3687	0.9849 113.25 9.3757	0.9856 113.33 9.3826	0.9864 113.41 9.3895	0.9871 113.49 9.3964	0.9878 113.58 9.4032	0.9885 113.66 9.4099	
94.3 169.74 22.167			0.9819 112.90 9.3468	0.9823 112.94 9.3503	0.9826 112.98 9.3539	0.9830 113.02 9.3574	0.9837 113.11 9.3645	0.9845 113.19 9.3715	0.9852 113.28 9.3784	0.9859 113.36 9.3853	0.9866 113.44 9.3922	0.9874 113.53 9.3990	0.9881 113.61 9.4058	
94.4 169.92 22.378			0.9814 112.84 9.3425	0.9818 112.89 9.3461	0.9822 112.93 9.3496	0.9825 112.97 9.3532	0.9833 113.06 9.3602	0.9840 113.14 9.3672	0.9848 113.23 9.3742	0.9855 113.31 9.3811	0.9862 113.39 9.3880	0.9869 113.48 9.3949	0.9876 113.56 9.4017	
94.5 170.10 22.592			0.9810 112.79 9.3382	0.9814 112.84 9.3418	0.9817 112.88 9.3454	0.9821 112.92 9.3489	0.9828 113.01 9.3560	0.9836 113.09 9.3630	0.9843 113.18 9.3700	0.9850 113.26 9.3769	0.9858 113.34 9.3838	0.9865 113.43 9.3907	0.9872 113.51 9.3975	
94.6 170.28 22.806			0.9805 112.74 9.3339	0.9809 112.78 9.3375	0.9813 112.83 9.3411	0.9817 112.87 9.3447	0.9824 112.96 9.3517	0.9831 113.04 9.3588	0.9839 113.13 9.3658	0.9846 113.21 9.3728	0.9853 113.29 9.3797	0.9861 113.38 9.3866	0.9868 113.46 9.3934	
94.7 170.46 23.022			0.9801 112.69 9.3296	0.9805 112.73 9.3332	0.9808 112.78 9.3368	0.9812 112.82 9.3404	0.9820 112.90 9.3475	0.9827 112.99 9.3546	0.9834 113.07 9.3616	0.9842 113.16 9.3686	0.9849 113.24 9.3755	0.9856 113.33 9.3824	0.9863 113.41 9.3892	
94.8 170.64 23.240			0.9796 112.64 9.3254	0.9800 112.68 9.3290	0.9804 112.72 9.3325	0.9808 112.77 9.3361	0.9815 112.85 9.3433	0.9823 112.94 9.3503	0.9830 113.02 9.3574	0.9837 113.11 9.3644	0.9845 113.19 9.3713	0.9852 113.28 9.3782	0.9859 113.36 9.3851	
94.9 170.82 23.459			0.9792 112.59 9.3211	0.9796 112.63 9.3247	0.9799 112.67 9.3283	0.9803 112.72 9.3319	0.9811 112.80 9.3390	0.9818 112.89 9.3461	0.9825 112.97 9.3532	0.9833 113.06 9.3602	0.9840 113.14 9.3671	0.9847 113.23 9.3741	0.9855 113.31 9.3809	
95.0 171.00 23.680			0.9787 112.53 9.3168	0.9791 112.58 9.3204	0.9795 112.62 9.3240	0.9799 112.66 9.3276	0.9806 112.75 9.3347	0.9814 112.84 9.3419	0.9821 112.92 9.3489	0.9828 113.01 9.3560	0.9836 113.09 9.3629	0.9843 113.18 9.3699	0.9850 113.26 9.3768	
95.1 171.18 23.902			0.9783 112.48 9.3125	0.9787 112.53 9.3161	0.9790 112.57 9.3197	0.9794 112.61 9.3233	0.9802 112.70 9.3305	0.9809 112.79 9.3376	0.9817 112.87 9.3447	0.9824 112.96 9.3518	0.9831 113.04 9.3588	0.9839 113.12 9.3657	0.9846 113.21 9.3726	
95.2 171.36 24.126			0.9778 112.43 9.3081	0.9782 112.47 9.3118	0.9786 112.52 9.3154	0.9790 112.56 9.3190	0.9797 112.65 9.3262	0.9805 112.73 9.3334	0.9812 112.82 9.3405	0.9820 112.91 9.3475	0.9827 112.99 9.3546	0.9834 113.07 9.3615	0.9842 113.16 9.3685	
95.3 171.54 24.352			0.9774 112.38 9.3038	0.9777 112.42 9.3075	0.9781 112.47 9.3111	0.9785 112.51 9.3148	0.9793 112.60 9.3220	0.9800 112.68 9.3291	0.9808 112.77 9.3363	0.9815 112.85 9.3433	0.9823 112.94 9.3504	0.9830 113.02 9.3574	0.9837 113.11 9.3643	
95.4 171.72 24.579			0.9769 112.33 9.2995	0.9773 112.37 9.3032	0.9777 112.41 9.3068	0.9781 112.46 9.3105	0.9788 112.54 9.3177	0.9796 112.63 9.3249	0.9803 112.72 9.3320	0.9811 112.80 9.3391	0.9818 112.89 9.3462	0.9826 112.97 9.3532	0.9833 113.06 9.3602	
95.5 171.90 24.808			0.9765 112.27 9.2952	0.9768 112.32 9.2989	0.9772 112.36 9.3025	0.9776 112.41 9.3062	0.9784 112.49 9.3134	0.9791 112.58 9.3206	0.9799 112.67 9.3278	0.9806 112.75 9.3349	0.9814 112.84 9.3420	0.9821 112.92 9.3490	0.9828 113.01 9.3560	
95.6 172.08 25.038				0.9764 112.27 9.2946	0.9768 112.31 9.2982	0.9772 112.35 9.3019	0.9779 112.44 9.3092	0.9787 112.53 9.3164	0.9794 112.62 9.3236	0.9802 112.70 9.3307	0.9809 112.79 9.3378	0.9817 112.87 9.3448	0.9824 112.96 9.3518	
95.7 172.26 25.270				0.9759 112.21 9.2903	0.9763 112.26 9.2939	0.9767 112.30 9.2976	0.9775 112.39 9.3049	0.9782 112.48 9.3121	0.9790 112.56 9.3193	0.9797 112.65 9.3265	0.9805 112.74 9.3336	0.9812 112.82 9.3406	0.9820 112.91 9.3477	
95.8 172.44 25.503				0.9755 112.16 9.2859	0.9759 112.21 9.2896	0.9763 112.25 9.2933	0.9770 112.34 9.3006	0.9778 112.43 9.3079	0.9785 112.51 9.3151	0.9793 112.60 9.3222	0.9800 112.69 9.3294	0.9808 112.77 9.3364	0.9815 112.86 9.3435	
95.9 172.62 25.739				0.9750 112.11 9.2816	0.9754 112.15 9.2853	0.9758 112.20 9.2890	0.9766 112.29 9.2963	0.9773 112.37 9.3036	0.9781 112.46 9.3108	0.9789 112.55 9.3180	0.9796 112.63 9.3252	0.9804 112.72 9.3323	0.9811 112.81 9.3393	

1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA			TABLE ENTRIES											
PSIA ATM.			1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70 °F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL											
12.000 0.817	14.696 1.000	25.000 1.701	50.000 3.402	75.000 5.103	100.000 6.805	150.000 10.207	200.000 13.609	250.000 17.011	300.000 20.414	350.000 23.816	400.000 27.218	450.000 30.621		
96.0 172.80 25.975			0.9746 112.06 9.2773	0.9750 112.10 9.2810	0.9754 112.15 9.2847	0.9761 112.23 9.2920	0.9769 112.32 9.2993	0.9777 112.41 9.3066	0.9784 112.50 9.3138	0.9792 112.58 9.3209	0.9799 112.67 9.3281	0.9807 112.76 9.3351		
96.1 172.98 26.214			0.9741 112.00 9.2730	0.9745 112.05 9.2767	0.9749 112.09 9.2804	0.9757 112.18 9.2878	0.9764 112.27 9.2951	0.9772 112.36 9.3023	0.9780 112.45 9.3096	0.9787 112.53 9.3167	0.9795 112.62 9.3239	0.9802 112.70 9.3309		
96.2 173.16 26.454			0.9737 111.95 9.2687	0.9741 112.00 9.2724	0.9744 112.04 9.2761	0.9752 112.13 9.2835	0.9760 112.22 9.2908	0.9768 112.31 9.2981	0.9775 112.40 9.3053	0.9783 112.48 9.3125	0.9790 112.57 9.3197	0.9798 112.65 9.3268		
96.3 173.34 26.696			0.9732 111.90 9.2643	0.9736 111.95 9.2680	0.9740 111.99 9.2718	0.9748 112.08 9.2792	0.9755 112.17 9.2865	0.9763 112.26 9.2938	0.9771 112.34 9.3011	0.9778 112.43 9.3083	0.9786 112.52 9.3155	0.9793 112.60 9.3226		
96.4 173.52 26.939			0.9728 111.85 9.2600	0.9732 111.89 9.2637	0.9735 111.94 9.2675	0.9743 112.03 9.2749	0.9751 112.12 9.2822	0.9759 112.20 9.2896	0.9766 112.29 9.2968	0.9774 112.38 9.3041	0.9781 112.47 9.3112	0.9789 112.55 9.3184		
96.5 173.70 27.184			0.9723 111.80 9.2556	0.9727 111.84 9.2594	0.9731 111.89 9.2631	0.9739 111.98 9.2706	0.9746 112.06 9.2780	0.9754 112.15 9.2853	0.9762 112.24 9.2926	0.9769 112.33 9.2998	0.9777 112.42 9.3070	0.9785 112.50 9.3142		
96.6 173.88 27.431			0.9718 111.74 9.2513	0.9722 111.79 9.2551	0.9726 111.83 9.2588	0.9734 111.92 9.2663	0.9742 112.01 9.2737	0.9750 112.10 9.2810	0.9757 112.19 9.2883	0.9765 112.28 9.2956	0.9773 112.37 9.3028	0.9780 112.45 9.3100		
96.7 174.06 27.680			0.9714 111.69 9.2470	0.9718 111.74 9.2507	0.9722 111.78 9.2545	0.9730 111.87 9.2620	0.9737 111.96 9.2694	0.9745 112.05 9.2768	0.9753 112.14 9.2841	0.9761 112.23 9.2914	0.9768 112.31 9.2986	0.9776 112.40 9.3058		
96.8 174.24 27.930			0.9709 111.64 9.2426	0.9713 111.68 9.2464	0.9717 111.73 9.2502	0.9725 111.82 9.2577	0.9733 111.91 9.2651	0.9741 112.00 9.2725	0.9748 112.09 9.2798	0.9756 112.18 9.2871	0.9764 112.26 9.2944	0.9771 112.35 9.3016		
96.9 174.42 28.182			0.9705 111.59 9.2383	0.9709 111.63 9.2420	0.9713 111.68 9.2458	0.9721 111.77 9.2533	0.9728 111.86 9.2608	0.9736 111.95 9.2682	0.9744 112.04 9.2756	0.9752 112.12 9.2829	0.9759 112.21 9.2902	0.9767 112.30 9.2974		
97.0 174.60 28.435			0.9700 111.53 9.2339	0.9704 111.58 9.2377	0.9708 111.62 9.2415	0.9716 111.72 9.2490	0.9724 111.81 9.2565	0.9732 111.90 9.2639	0.9739 111.98 9.2713	0.9747 112.07 9.2787	0.9755 112.16 9.2859	0.9762 112.25 9.2932		
97.1 174.78 28.691			0.9696 111.48 9.2295	0.9700 111.53 9.2334	0.9704 111.57 9.2371	0.9712 111.66 9.2447	0.9719 111.75 9.2522	0.9727 111.84 9.2597	0.9735 111.93 9.2671	0.9743 112.02 9.2744	0.9750 112.11 9.2817	0.9758 112.20 9.2890		
97.2 174.96 28.948			0.9691 111.43 9.2252	0.9695 111.47 9.2290	0.9699 111.52 9.2328	0.9707 111.61 9.2404	0.9715 111.70 9.2479	0.9723 111.79 9.2554	0.9731 111.88 9.2628	0.9738 111.97 9.2702	0.9746 112.06 9.2775	0.9754 112.15 9.2848		
97.3 175.14 29.207			0.9686 111.37 9.2208	0.9690 111.42 9.2246	0.9694 111.47 9.2285	0.9702 111.56 9.2361	0.9710 111.65 9.2436	0.9718 111.74 9.2511	0.9726 111.83 9.2585	0.9734 111.92 9.2659	0.9742 112.01 9.2733	0.9749 112.10 9.2805		
97.4 175.32 29.467			0.9682 111.32 9.2164	0.9686 111.37 9.2203	0.9690 111.41 9.2241	0.9698 111.51 9.2317	0.9706 111.60 9.2393	0.9714 111.69 9.2468	0.9722 111.78 9.2542	0.9729 111.87 9.2617	0.9737 111.96 9.2690	0.9745 112.05 9.2763		
97.5 175.50 29.729			0.9677 111.27 9.2121	0.9681 111.32 9.2159	0.9685 111.36 9.2198	0.9693 111.45 9.2274	0.9701 111.55 9.2350	0.9709 111.64 9.2425	0.9717 111.73 9.2500	0.9725 111.82 9.2574	0.9733 111.91 9.2648	0.9740 112.00 9.2721		
97.6 175.68 29.993			0.9673 111.22 9.2077	0.9677 111.26 9.2116	0.9681 111.31 9.2154	0.9689 111.40 9.2231	0.9697 111.49 9.2307	0.9705 111.58 9.2382	0.9713 111.68 9.2457	0.9720 111.77 9.2531	0.9728 111.85 9.2605	0.9736 111.94 9.2679		
97.7 175.86 30.259			0.9668 111.16 9.2033	0.9672 111.21 9.2072	0.9676 111.26 9.2110	0.9684 111.35 9.2187	0.9692 111.44 9.2263	0.9700 111.53 9.2339	0.9708 111.62 9.2414	0.9716 111.71 9.2489	0.9724 111.80 9.2563	0.9731 111.89 9.2637		
97.8 176.04 30.527			0.9663 111.11 9.1989	0.9668 111.16 9.2028	0.9672 111.20 9.2067	0.9680 111.30 9.2144	0.9688 111.39 9.2220	0.9696 111.48 9.2296	0.9704 111.57 9.2371	0.9711 111.66 9.2446	0.9719 111.75 9.2520	0.9727 111.84 9.2594		
97.9 176.22 30.796			0.9659 111.06 9.1946	0.9663 111.10 9.1984	0.9667 111.15 9.2023	0.9675 111.24 9.2100	0.9683 111.34 9.2177	0.9691 111.43 9.2253	0.9699 111.52 9.2328	0.9707 111.61 9.2403	0.9715 111.70 9.2478	0.9723 111.79 9.2552		

TABLE 4 - CONTINUED

DENSITY OF COMPRESSED LIQUID OXYGEN - CONTINUED

TABLE ENTRIES														
1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA				1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL										
PSIA ATM.	12.000 0.817	14.696 1.000	25.000 1.701	50.000 3.402	75.000 5.103	100.000 6.805	150.000 10.207	200.000 13.609	250.000 17.011	300.000 20.414	350.000 23.816	400.000 27.218	450.000 30.621	
98.0 176.40 31.067				0.9654 111.00 9.1902	0.9658 111.05 9.1941	0.9662 111.10 9.1979	0.9671 111.19 9.2057	0.9679 111.28 9.2134	0.9687 111.38 9.2210	0.9695 111.47 9.2286	0.9702 111.56 9.2361	0.9710 111.65 9.2435	0.9718 111.74 9.2510	
98.1 176.58 31.340				0.9650 110.95 9.1858	0.9654 111.00 9.1897	0.9658 111.05 9.1936	0.9666 111.14 9.2013	0.9674 111.23 9.2090	0.9682 111.32 9.2167	0.9690 111.42 9.2243	0.9698 111.51 9.2318	0.9706 111.60 9.2393	0.9714 111.69 9.2467	
98.2 176.76 31.615				0.9645 110.90 9.1814	0.9649 110.95 9.1853	0.9653 110.99 9.1892	0.9661 111.09 9.1970	0.9670 111.18 9.2047	0.9678 111.27 9.2124	0.9686 111.36 9.2200	0.9693 111.46 9.2275	0.9701 111.55 9.2350	0.9709 111.64 9.2425	
98.3 176.94 31.891				0.9640 110.85 9.1770	0.9645 110.89 9.1809	0.9649 110.94 9.1848	0.9657 111.03 9.1926	0.9665 111.13 9.2003	0.9673 111.22 9.2080	0.9681 111.31 9.2157	0.9689 111.40 9.2232	0.9697 111.49 9.2308	0.9705 111.59 9.2382	
98.4 177.12 32.170				0.9636 110.79 9.1726	0.9640 110.84 9.1765	0.9644 110.89 9.1804	0.9652 110.98 9.1882	0.9660 111.07 9.1960	0.9668 111.17 9.2037	0.9677 111.26 9.2114	0.9684 111.35 9.2190	0.9692 111.44 9.2265	0.9700 111.53 9.2340	
98.5 177.30 32.450				0.9631 110.74 9.1682	0.9635 110.79 9.1721	0.9639 110.83 9.1761	0.9648 110.93 9.1839	0.9656 111.02 9.1917	0.9664 111.12 9.1994	0.9672 111.21 9.2071	0.9680 111.30 9.2147	0.9688 111.39 9.2222	0.9696 111.48 9.2297	
98.6 177.48 32.732				0.9626 110.69 9.1638	0.9631 110.73 9.1677	0.9635 110.78 9.1717	0.9643 110.88 9.1795	0.9651 110.97 9.1873	0.9659 111.06 9.1951	0.9667 111.16 9.2027	0.9675 111.25 9.2104	0.9683 111.34 9.2180	0.9691 111.43 9.2255	
98.7 177.66 33.016				0.9622 110.63 9.1593	0.9626 110.68 9.1633	0.9630 110.73 9.1673	0.9638 110.82 9.1751	0.9647 110.92 9.1830	0.9655 111.01 9.1907	0.9663 111.10 9.1984	0.9671 111.20 9.2061	0.9679 111.29 9.2137	0.9687 111.38 9.2212	
98.8 177.84 33.301				0.9617 110.58 9.1549	0.9621 110.63 9.1589	0.9626 110.67 9.1629	0.9634 110.77 9.1708	0.9642 110.86 9.1786	0.9650 110.96 9.1864	0.9658 111.05 9.1941	0.9666 111.14 9.2018	0.9674 111.24 9.2094	0.9682 111.33 9.2170	
98.9 178.02 33.589				0.9613 110.53 9.1505	0.9617 110.57 9.1545	0.9621 110.62 9.1585	0.9629 110.72 9.1664	0.9638 110.81 9.1742	0.9646 110.91 9.1820	0.9654 111.00 9.1898	0.9662 111.09 9.1975	0.9670 111.19 9.2051	0.9678 111.28 9.2127	
99.0 178.20 33.878				0.9608 110.47 9.1461	0.9612 110.52 9.1501	0.9616 110.57 9.1541	0.9625 110.66 9.1620	0.9633 110.76 9.1699	0.9641 110.85 9.1777	0.9649 110.95 9.1855	0.9657 111.04 9.1932	0.9665 111.13 9.2008	0.9673 111.23 9.2085	
99.1 178.38 34.169				0.9603 110.42 9.1416	0.9607 110.47 9.1457	0.9612 110.52 9.1497	0.9620 110.61 9.1576	0.9628 110.71 9.1655	0.9637 110.80 9.1734	0.9645 110.90 9.1811	0.9653 110.99 9.1889	0.9661 111.08 9.1966	0.9669 111.17 9.2042	
99.2 178.56 34.463				0.9599 110.36 9.1372	0.9603 110.41 9.1412	0.9607 110.46 9.1452	0.9615 110.56 9.1532	0.9624 110.65 9.1611	0.9632 110.75 9.1690	0.9640 110.84 9.1768	0.9648 110.94 9.1846	0.9656 111.03 9.1923	0.9664 111.12 9.1999	
99.3 178.74 34.758				0.9594 110.31 9.1328	0.9598 110.36 9.1368	0.9602 110.41 9.1408	0.9611 110.51 9.1488	0.9619 110.60 9.1568	0.9627 110.70 9.1647	0.9636 110.79 9.1725	0.9644 110.88 9.1803	0.9652 110.98 9.1880	0.9660 111.07 9.1956	
99.4 178.92 35.054				0.9589 110.26 9.1283	0.9594 110.31 9.1324	0.9598 110.36 9.1364	0.9606 110.45 9.1444	0.9615 110.55 9.1524	0.9623 110.64 9.1603	0.9631 110.74 9.1681	0.9639 110.83 9.1759	0.9647 110.93 9.1837	0.9656 111.02 9.1914	
99.5 179.10 35.353				0.9585 110.20 9.1239	0.9589 110.25 9.1279	0.9593 110.30 9.1320	0.9602 110.40 9.1400	0.9610 110.50 9.1480	0.9618 110.59 9.1559	0.9627 110.69 9.1638	0.9635 110.78 9.1716	0.9643 110.87 9.1794	0.9651 110.97 9.1871	
99.6 179.28 35.654				0.9580 110.15 9.1194	0.9584 110.20 9.1235	0.9588 110.25 9.1276	0.9597 110.35 9.1356	0.9605 110.44 9.1436	0.9614 110.54 9.1516	0.9622 110.63 9.1595	0.9630 110.73 9.1673	0.9638 110.82 9.1751	0.9647 110.92 9.1828	
99.7 179.46 35.956				0.9575 110.10 9.1150	0.9580 110.15 9.1191	0.9584 110.19 9.1231	0.9592 110.29 9.1312	0.9601 110.39 9.1392	0.9609 110.49 9.1472	0.9617 110.58 9.1551	0.9626 110.68 9.1630	0.9634 110.77 9.1708	0.9642 110.86 9.1785	
99.8 179.64 36.261				0.9571 110.04 9.1105	0.9575 110.09 9.1146	0.9579 110.14 9.1187	0.9588 110.24 9.1268	0.9596 110.34 9.1348	0.9605 110.43 9.1428	0.9613 110.53 9.1508	0.9621 110.62 9.1586	0.9629 110.72 9.1665	0.9638 110.81 9.1742	
99.9 179.82 36.567				0.9566 109.99 9.1061	0.9570 110.04 9.1102	0.9575 110.09 9.1143	0.9583 110.19 9.1224	0.9592 110.28 9.1305	0.9600 110.38 9.1385	0.9608 110.48 9.1464	0.9617 110.57 9.1543	0.9625 110.67 9.1621	0.9633 110.76 9.1699	

TABLE 4 - CONTINUED

DENSITY OF COMPRESSED LIQUID OXYGEN - CONTINUED

1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA				TABLE ENTRIES										
				1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL										
PSIA	12.000	14.696	25.000	50.000	75.000	100.000	150.000	200.000	250.000	300.000	350.000	400.000	450.000	
ATM.	0.817	1.000	1.701	3.402	5.103	6.805	10.207	13.609	17.011	20.414	23.816	27.218	30.621	
100.0 180.00 36.876				0.9561 109.93 9.1016	0.9566 109.98 9.1057	0.9570 110.03 9.1098	0.9578 110.13 9.1180	0.9587 110.23 9.1261	0.9595 110.33 9.1341	0.9604 110.42 9.1421	0.9612 110.52 9.1500	0.9620 110.61 9.1578	0.9628 110.71 9.1656	
100.1 180.18 37.186				0.9557 109.88 9.0971	0.9561 109.93 9.1013	0.9565 109.98 9.1054	0.9574 110.08 9.1135	0.9582 110.18 9.1217	0.9591 110.27 9.1297	0.9599 110.37 9.1377	0.9607 110.47 9.1456	0.9616 110.56 9.1535	0.9624 110.66 9.1613	
100.2 180.36 37.498				0.9552 109.83 9.0927	0.9556 109.88 9.0968	0.9560 109.93 9.1009	0.9569 110.03 9.1091	0.9578 110.12 9.1172	0.9586 110.22 9.1253	0.9595 110.32 9.1333	0.9603 110.41 9.1413	0.9611 110.51 9.1492	0.9619 110.60 9.1570	
100.3 180.54 37.813				0.9547 109.77 9.0882	0.9551 109.82 9.0923	0.9556 109.87 9.0965	0.9564 109.97 9.1047	0.9573 110.07 9.1128	0.9582 110.17 9.1209	0.9590 110.27 9.1290	0.9598 110.36 9.1369	0.9607 110.46 9.1449	0.9615 110.55 9.1527	
100.4 180.72 38.129				0.9542 109.72 9.0837	0.9547 109.77 9.0879	0.9551 109.82 9.0920	0.9560 109.92 9.1002	0.9568 110.02 9.1084	0.9577 110.12 9.1165	0.9585 110.21 9.1246	0.9594 110.31 9.1326	0.9602 110.40 9.1405	0.9610 110.50 9.1484	
100.5 180.90 38.447				0.9538 109.66 9.0792	0.9542 109.71 9.0834	0.9546 109.76 9.0875	0.9555 109.86 9.0958	0.9564 109.96 9.1040	0.9572 110.06 9.1121	0.9581 110.16 9.1202	0.9589 110.26 9.1282	0.9598 110.35 9.1362	0.9606 110.45 9.1441	
100.6 181.08 38.767				0.9533 109.61 9.0747	0.9537 109.66 9.0789	0.9542 109.71 9.0831	0.9550 109.81 9.0914	0.9559 109.91 9.0996	0.9568 110.01 9.1078	0.9576 110.11 9.1159	0.9585 110.20 9.1239	0.9593 110.30 9.1319	0.9601 110.40 9.1398	
100.7 181.26 39.089				0.9528 109.56 9.0702	0.9533 109.61 9.0744	0.9537 109.66 9.0786	0.9546 109.76 9.0869	0.9554 109.86 9.0952	0.9563 109.96 9.1033	0.9572 110.05 9.1115	0.9580 110.15 9.1195	0.9588 110.25 9.1275	0.9597 110.34 9.1355	
100.8 181.44 39.413				0.9524 109.50 9.0657	0.9528 109.55 9.0700	0.9532 109.60 9.0741	0.9541 109.70 9.0825	0.9550 109.80 9.0907	0.9558 109.90 9.0989	0.9567 110.00 9.1071	0.9575 110.10 9.1152	0.9584 110.20 9.1232	0.9592 110.29 9.1312	
100.9 181.62 39.739				0.9519 109.45 9.0612	0.9523 109.50 9.0655	0.9528 109.55 9.0697	0.9536 109.65 9.0780	0.9545 109.75 9.0863	0.9554 109.85 9.0945	0.9562 109.95 9.1027	0.9571 110.05 9.1108	0.9579 110.14 9.1188	0.9588 110.24 9.1268	
101.0 181.80 40.067				0.9514 109.39 9.0567	0.9519 109.44 9.0610	0.9523 109.49 9.0652	0.9532 109.60 9.0736	0.9540 109.70 9.0819	0.9549 109.80 9.0901	0.9558 109.89 9.0983	0.9566 109.99 9.1064	0.9575 110.09 9.1145	0.9583 110.19 9.1225	
101.1 181.98 40.398				0.9509 109.34 9.0522	0.9514 109.39 9.0565	0.9518 109.44 9.0607	0.9527 109.54 9.0691	0.9536 109.64 9.0774	0.9545 109.74 9.0857	0.9553 109.84 9.0939	0.9562 109.94 9.1021	0.9570 110.04 9.1101	0.9579 110.13 9.1182	
101.2 182.16 40.730				0.9505 109.28 9.0477	0.9509 109.34 9.0520	0.9514 109.39 9.0562	0.9522 109.49 9.0646	0.9531 109.59 9.0730	0.9540 109.69 9.0813	0.9549 109.79 9.0895	0.9557 109.89 9.0977	0.9566 109.99 9.1058	0.9574 110.08 9.1138	
101.3 182.34 41.064				0.9500 109.23 9.0432	0.9504 109.28 9.0475	0.9509 109.33 9.0517	0.9518 109.43 9.0602	0.9526 109.54 9.0685	0.9535 109.64 9.0769	0.9544 109.74 9.0851	0.9552 109.83 9.0933	0.9561 109.93 9.1014	0.9570 110.03 9.1095	
101.4 182.52 41.400				0.9495 109.17 9.0387	0.9500 109.23 9.0430	0.9504 109.28 9.0472	0.9513 109.38 9.0557	0.9522 109.48 9.0641	0.9531 109.58 9.0724	0.9539 109.68 9.0807	0.9548 109.78 9.0889	0.9556 109.88 9.0971	0.9565 109.98 9.1052	
101.5 182.70 41.739				0.9490 109.12 9.0342	0.9495 109.17 9.0384	0.9499 109.22 9.0427	0.9508 109.33 9.0512	0.9517 109.43 9.0596	0.9526 109.53 9.0680	0.9535 109.63 9.0763	0.9543 109.73 9.0845	0.9552 109.83 9.0927	0.9560 109.93 9.1008	
101.6 182.88 42.079				0.9486 109.07 9.0296	0.9490 109.12 9.0339	0.9495 109.17 9.0382	0.9504 109.27 9.0467	0.9512 109.37 9.0552	0.9521 109.48 9.0636	0.9530 109.58 9.0719	0.9539 109.68 9.0801	0.9547 109.77 9.0883	0.9556 109.87 9.0965	
101.7 183.06 42.421				0.9481 109.01 9.0251	0.9485 109.06 9.0294	0.9490 109.11 9.0337	0.9499 109.22 9.0422	0.9508 109.32 9.0507	0.9517 109.42 9.0591	0.9525 109.52 9.0675	0.9534 109.62 9.0757	0.9543 109.72 9.0840	0.9551 109.82 9.0921	
101.8 183.24 42.766				0.9476 108.96 9.0206	0.9481 109.01 9.0249	0.9485 109.06 9.0292	0.9494 109.16 9.0378	0.9503 109.27 9.0463	0.9512 109.37 9.0547	0.9521 109.47 9.0630	0.9529 109.57 9.0713	0.9538 109.67 9.0796	0.9547 109.77 9.0878	
101.9 183.42 43.112				0.9471 108.90 9.0160	0.9476 109.05 9.0204	0.9480 109.01 9.0247	0.9489 109.11 9.0333	0.9498 109.21 9.0418	0.9507 109.31 9.0502	0.9516 109.42 9.0586	0.9525 109.52 9.0669	0.9533 109.62 9.0752	0.9542 109.71 9.0834	

TABLE 4 - CONTINUED

DENSITY OF COMPRESSED LIQUID OXYGEN - CONTINUED

1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA				TABLE ENTRIES										
				1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL										
PSIA	12.000	14.696	25.000	50.000	75.000	100.000	150.000	200.000	250.000	300.000	350.000	400.000	450.000	
ATM.	0.817	1.000	1.701	3.402	5.103	6.805	10.207	13.609	17.011	20.414	23.816	27.218	30.621	
102.0 183.60 43.461				0.9467 108.85 9.0115	0.9471 108.90 9.0158	0.9476 108.95 9.0202	0.9485 109.05 9.0248	0.9494 109.16 9.0373	0.9503 109.26 9.0458	0.9511 109.36 9.0542	0.9520 109.46 9.0625	0.9529 109.56 9.0708	0.9538 109.66 9.0790	
102.1 183.78 43.812				0.9462 108.79 9.0069	0.9466 108.84 9.0113	0.9471 108.90 9.0156	0.9480 109.00 9.0243	0.9489 109.10 9.0328	0.9498 109.21 9.0413	0.9507 109.31 9.0498	0.9516 109.41 9.0581	0.9524 109.51 9.0664	0.9533 109.61 9.0747	
102.2 183.96 44.165				0.9457 108.74 9.0024	0.9462 108.79 9.0067	0.9466 108.84 9.0111	0.9475 108.95 9.0198	0.9484 109.05 9.0284	0.9493 109.15 9.0369	0.9502 109.25 9.0453	0.9511 109.36 9.0537	0.9520 109.46 9.0620	0.9528 109.56 9.0703	
102.3 184.14 44.520				0.9452 108.68 8.9978	0.9457 108.73 9.0022	0.9461 108.79 9.0066	0.9470 108.89 9.0153	0.9480 109.00 9.0239	0.9489 109.10 9.0324	0.9497 109.20 9.0409	0.9506 109.30 9.0493	0.9515 109.40 9.0576	0.9524 109.50 9.0659	
102.4 184.32 44.877				0.9447 108.63 8.9932	0.9452 108.68 8.9976	0.9457 108.73 9.0020	0.9466 108.84 9.0107	0.9475 108.94 9.0194	0.9484 109.05 9.0279	0.9493 109.15 9.0364	0.9502 109.25 9.0449	0.9510 109.35 9.0533	0.9519 109.45 9.0616	
102.5 184.50 45.236				0.9443 108.57 8.9887	0.9447 108.62 8.9931	0.9452 108.68 8.9975	0.9461 108.78 9.0062	0.9470 108.89 9.0149	0.9479 108.99 9.0235	0.9488 109.09 9.0320	0.9497 109.20 9.0405	0.9506 109.30 9.0489	0.9515 109.40 9.0572	
102.6 184.68 45.597				0.9438 108.52 8.9841	0.9442 108.57 8.9885	0.9447 108.62 8.9929	0.9456 108.73 9.0017	0.9465 108.83 9.0104	0.9474 108.94 9.0190	0.9483 109.04 9.0276	0.9492 109.14 9.0360	0.9501 109.24 9.0444	0.9510 109.35 9.0528	
102.7 184.86 45.961				0.9433 108.46 8.9795	0.9438 108.51 8.9840	0.9442 108.57 8.9884	0.9452 108.67 8.9972	0.9461 108.78 9.0059	0.9470 108.88 9.0145	0.9479 108.99 9.0231	0.9488 109.09 9.0316	0.9497 109.19 9.0400	0.9506 109.29 9.0484	
102.8 185.04 46.326				0.9428 108.40 8.9749	0.9433 108.46 8.9794	0.9437 108.51 8.9838	0.9447 108.62 8.9926	0.9456 108.72 9.0014	0.9465 108.83 9.0100	0.9474 108.93 9.0186	0.9483 109.04 9.0272	0.9492 109.14 9.0356	0.9501 109.24 9.0440	
102.9 185.22 46.694				0.9423 108.35 8.9704	0.9428 108.40 8.9748	0.9433 108.46 8.9793	0.9442 108.56 8.9881	0.9451 108.67 8.9969	0.9460 108.77 9.0056	0.9469 108.88 9.0142	0.9478 108.98 9.0227	0.9487 109.08 9.0312	0.9496 109.19 9.0396	
103.0 185.40 47.064				0.9419 108.29 8.9658	0.9423 108.35 8.9703	0.9428 108.40 8.9747	0.9437 108.51 8.9836	0.9446 108.62 8.9924	0.9456 108.72 9.0011	0.9465 108.82 9.0097	0.9474 108.93 9.0183	0.9483 109.03 9.0268	0.9491 109.13 9.0352	
103.1 185.58 47.436				0.9414 108.24 8.9612	0.9418 108.29 8.9657	0.9423 108.35 8.9701	0.9432 108.45 8.9790	0.9442 108.56 8.9878	0.9451 108.67 8.9966	0.9460 108.77 9.0052	0.9469 108.87 9.0138	0.9478 108.98 9.0224	0.9487 109.08 9.0308	
103.2 185.76 47.810				0.9409 108.18 8.9566	0.9414 108.24 8.9611	0.9418 108.29 8.9656	0.9428 108.40 8.9745	0.9437 108.51 8.9833	0.9446 108.61 8.9921	0.9455 108.72 9.0008	0.9464 108.82 9.0094	0.9473 108.92 9.0179	0.9482 109.03 9.0264	
103.3 185.94 48.187				0.9404 108.13 8.9520	0.9409 108.18 8.9565	0.9413 108.24 8.9610	0.9423 108.34 8.9699	0.9432 108.45 8.9788	0.9441 108.56 8.9876	0.9451 108.66 8.9963	0.9460 108.77 9.0049	0.9469 108.87 9.0135	0.9478 108.97 9.0220	
103.4 186.12 48.566				0.9399 108.07 8.9474	0.9404 108.13 8.9519	0.9409 108.18 8.9564	0.9418 108.29 8.9654	0.9427 108.40 8.9743	0.9437 108.50 8.9831	0.9446 108.61 8.9918	0.9455 108.71 9.0005	0.9464 108.82 9.0091	0.9473 108.92 9.0176	
103.5 186.30 48.947				0.9394 108.02 8.9428	0.9399 108.07 8.9473	0.9404 108.13 8.9518	0.9413 108.23 8.9608	0.9423 108.34 8.9697	0.9432 108.45 8.9786	0.9441 108.55 8.9873	0.9450 108.66 8.9960	0.9459 108.76 9.0046	0.9468 108.87 9.0132	
103.6 186.48 49.330				0.9389 107.96 8.9381	0.9394 108.02 8.9427	0.9399 108.07 8.9472	0.9409 108.18 8.9562	0.9418 108.29 8.9652	0.9427 108.39 8.9740	0.9436 108.50 8.9828	0.9446 108.61 8.9915	0.9455 108.71 9.0002	0.9464 108.81 9.0088	
103.7 186.66 49.715				0.9385 107.90 8.9335	0.9389 107.96 8.9381	0.9394 108.01 8.9426	0.9404 108.12 8.9517	0.9413 108.23 8.9606	0.9422 108.34 8.9695	0.9432 108.45 8.9783	0.9441 108.55 8.9871	0.9450 108.66 8.9957	0.9459 108.76 9.0043	
103.8 186.84 50.103					0.9385 107.90 8.9335	0.9389 107.96 8.9380	0.9399 108.07 8.9471	0.9408 108.18 8.9561	0.9418 108.28 8.9650	0.9427 108.39 8.9738	0.9436 108.50 8.9826	0.9445 108.60 8.9913	0.9454 108.71 9.0000	
103.9 187.02 50.492					0.9380 107.85 8.9289	0.9385 107.90 8.9334	0.9394 108.01 8.9425	0.9404 108.12 8.9515	0.9413 108.23 8.9605	0.9422 108.34 8.9693	0.9431 108.44 8.9781	0.9441 108.55 8.9868	0.9450 108.65 8.9955	

		TABLE ENTITIES											
1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA		1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL											
PSIA	12.000	14.696	25.000	50.000	75.000	100.000	150.000	200.000	250.000	300.000	350.000	400.000	450.000
ATM.	0.817	1.000	1.701	3.402	5.103	6.805	10.207	13.609	17.011	20.414	23.816	27.218	30.621
104.0 187.20 50.884					0.9375 107.79 8.9242	0.9380 107.85 8.9288	0.9389 107.96 8.9379	0.9399 108.07 8.9470	0.9408 108.18 8.9559	0.9418 108.28 8.9648	0.9427 108.39 8.9736	0.9436 108.49 8.9824	0.9445 108.60 8.9911
104.1 187.38 51.279					0.9370 107.74 8.9196	0.9375 107.79 8.9242	0.9384 107.90 8.9334	0.9394 108.01 8.9424	0.9403 108.12 8.9514	0.9413 108.23 8.9603	0.9422 108.33 8.9692	0.9431 108.44 8.9779	0.9440 108.55 8.9866
104.2 187.56 51.675					0.9365 107.68 8.9150	0.9370 107.74 8.9196	0.9380 107.85 8.9288	0.9389 107.96 8.9379	0.9399 108.07 8.9469	0.9408 108.17 8.9558	0.9417 108.28 8.9647	0.9427 108.39 8.9735	0.9436 108.49 8.9822
104.3 187.74 52.074					0.9360 107.62 8.9103	0.9365 107.68 8.9150	0.9375 107.79 8.9242	0.9384 107.90 8.9333	0.9394 108.01 8.9423	0.9403 108.12 8.9513	0.9413 108.23 8.9602	0.9422 108.33 8.9690	0.9431 108.44 8.9777
104.4 187.92 52.475					0.9355 107.57 8.9057	0.9360 107.62 8.9103	0.9370 107.74 8.9196	0.9380 107.85 8.9287	0.9389 107.96 8.9378	0.9399 108.06 8.9468	0.9408 108.17 8.9557	0.9417 108.28 8.9645	0.9426 108.38 8.9733
104.5 188.10 52.878					0.9351 107.51 8.9011	0.9355 107.57 8.9057	0.9365 107.68 8.9150	0.9375 107.79 8.9241	0.9384 107.90 8.9332	0.9394 108.01 8.9422	0.9403 108.12 8.9512	0.9412 108.22 8.9600	0.9422 108.33 8.9688
104.6 188.28 53.284					0.9346 107.46 8.8964	0.9351 107.51 8.9011	0.9360 107.62 8.9104	0.9370 107.74 8.9196	0.9380 107.85 8.9287	0.9389 107.96 8.9377	0.9398 108.06 8.9467	0.9408 108.17 8.9556	0.9417 108.28 8.9644
104.7 188.46 53.692					0.9341 107.40 8.8918	0.9346 107.46 8.8964	0.9355 107.57 8.9057	0.9365 107.68 8.9150	0.9375 107.79 8.9241	0.9384 107.90 8.9332	0.9394 108.01 8.9422	0.9403 108.12 8.9511	0.9412 108.22 8.9599
104.8 188.64 54.102					0.9336 107.34 8.8871	0.9341 107.40 8.8918	0.9351 107.51 8.9011	0.9360 107.62 8.9104	0.9370 107.74 8.9195	0.9380 107.85 8.9286	0.9389 107.96 8.9376	0.9398 108.06 8.9466	0.9408 108.17 8.9554
104.9 188.82 54.515					0.9331 107.29 8.8824	0.9336 107.34 8.8871	0.9346 107.46 8.8965	0.9355 107.57 8.9058	0.9365 107.68 8.9150	0.9375 107.79 8.9241	0.9384 107.90 8.9331	0.9394 108.01 8.9421	0.9403 108.12 8.9510
105.0 189.00 54.930					0.9326 107.23 8.8778	0.9331 107.29 8.8825	0.9341 107.40 8.8919	0.9351 107.51 8.9012	0.9360 107.63 8.9104	0.9370 107.74 8.9195	0.9379 107.85 8.9286	0.9389 107.96 8.9376	0.9398 108.06 8.9465
105.1 189.18 55.347					0.9321 107.17 8.8731	0.9326 107.23 8.8778	0.9336 107.35 8.8872	0.9346 107.46 8.8966	0.9356 107.57 8.9058	0.9365 107.68 8.9150	0.9375 107.79 8.9241	0.9384 107.90 8.9331	0.9394 108.01 8.9420
105.2 189.36 55.767					0.9316 107.12 8.8684	0.9321 107.18 8.8732	0.9331 107.29 8.8826	0.9341 107.40 8.8920	0.9351 107.51 8.9012	0.9360 107.63 8.9104	0.9370 107.74 8.9195	0.9379 107.84 8.9286	0.9389 107.95 8.9375
105.3 189.54 56.188					0.9311 107.06 8.8637	0.9316 107.12 8.8685	0.9326 107.23 8.8780	0.9336 107.35 8.8873	0.9346 107.46 8.8967	0.9356 107.57 8.9059	0.9365 107.68 8.9150	0.9375 107.79 8.9241	0.9384 107.90 8.9331
105.4 189.72 56.613					0.9306 107.00 8.8590	0.9311 107.06 8.8638	0.9321 107.18 8.8733	0.9331 107.29 8.8827	0.9341 107.40 8.8921	0.9351 107.52 8.9013	0.9360 107.63 8.9105	0.9370 107.74 8.9196	0.9379 107.84 8.9286
105.5 189.90 57.039					0.9301 106.95 8.8543	0.9306 107.01 8.8591	0.9317 107.12 8.8687	0.9326 107.24 8.8781	0.9336 107.35 8.8875	0.9346 107.46 8.8967	0.9356 107.57 8.9059	0.9365 107.68 8.9150	0.9375 107.79 8.9241
105.6 190.08 57.468					0.9297 106.89 8.8496	0.9302 106.95 8.8544	0.9312 107.06 8.8640	0.9322 107.18 8.8735	0.9331 107.29 8.8829	0.9341 107.40 8.8922	0.9351 107.52 8.9014	0.9360 107.63 8.9105	0.9370 107.74 8.9196
105.7 190.26 57.900					0.9292 106.83 8.8449	0.9297 106.89 8.8498	0.9307 107.01 8.8593	0.9317 107.12 8.8688	0.9327 107.24 8.8783	0.9336 107.35 8.8876	0.9346 107.46 8.8968	0.9356 107.57 8.9060	0.9365 107.68 8.9151
105.8 190.44 58.333					0.9287 106.78 8.8402	0.9292 106.84 8.8451	0.9302 106.95 8.8547	0.9312 107.07 8.8642	0.9322 107.18 8.8736	0.9332 107.29 8.8830	0.9341 107.41 8.8923	0.9351 107.52 8.9015	0.9361 107.63 8.9106
105.9 190.62 58.770					0.9282 106.72 8.8355	0.9287 106.78 8.8404	0.9297 106.90 8.8500	0.9307 107.01 8.8596	0.9317 107.13 8.8690	0.9327 107.24 8.8784	0.9337 107.35 8.8877	0.9346 107.46 8.8969	0.9356 107.57 8.9061

TABLE 4 - CONTINUED

DENSITY OF COMPRESSED LIQUID OXYGEN - CONTINUED

1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA				TABLE ENTRIES 1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL										
PSIA ATM.	12.000 0.817	14.696 1.000	25.000 1.701	50.000 3.402	75.000 5.103	100.000 6.805	150.000 10.207	200.000 13.609	250.000 17.011	300.000 20.414	350.000 23.816	400.000 27.218	450.000 30.621	
106.0 190.80 59.208					0.9277 106.66 8.8308	0.9282 106.72 8.8357	0.9292 106.84 8.8453	0.9302 106.96 8.8549	0.9312 107.07 8.8644	0.9322 107.18 8.8738	0.9332 107.30 8.8831	0.9341 107.41 8.8924	0.9351 107.52 8.9016	
106.1 190.98 59.649					0.9272 106.61 8.8261	0.9277 106.67 8.8309	0.9287 106.78 8.8406	0.9297 106.90 8.8503	0.9307 107.01 8.8598	0.9317 107.13 8.8692	0.9327 107.24 8.8786	0.9337 107.35 8.8878	0.9346 107.46 8.8970	
106.2 191.16 60.093					0.9267 106.55 8.8213	0.9272 106.61 8.8262	0.9282 106.73 8.8360	0.9292 106.84 8.8456	0.9302 106.96 8.8552	0.9312 107.07 8.8646	0.9322 107.19 8.8740	0.9332 107.30 8.8833	0.9342 107.41 8.8925	
106.3 191.34 60.538					0.9262 106.49 8.8166	0.9267 106.55 8.8215	0.9277 106.67 8.8313	0.9287 106.79 8.8409	0.9297 106.90 8.8505	0.9307 107.02 8.8600	0.9317 107.13 8.8694	0.9327 107.24 8.8787	0.9337 107.35 8.8880	
106.4 191.52 60.987					0.9257 106.43 8.8118	0.9262 106.49 8.8166	0.9272 106.61 8.8266	0.9282 106.73 8.8363	0.9293 106.85 8.8459	0.9303 106.96 8.8554	0.9312 107.07 8.8648	0.9322 107.19 8.8742	0.9332 107.30 8.8835	
106.5 191.70 61.437					0.9252 106.38 8.8071	0.9257 106.44 8.8121	0.9267 106.56 8.8219	0.9278 106.67 8.8316	0.9288 106.79 8.8412	0.9298 106.91 8.8508	0.9308 107.02 8.8603	0.9318 107.13 8.8696	0.9327 107.25 8.8789	
106.6 191.88 61.890					0.9247 106.32 8.8024	0.9252 106.38 8.8073	0.9262 106.50 8.8172	0.9273 106.62 8.8269	0.9283 106.73 8.8366	0.9293 106.85 8.8462	0.9303 106.96 8.8557	0.9313 107.08 8.8651	0.9323 107.19 8.8744	
106.7 192.06 62.346					0.9242 106.26 8.7976	0.9247 106.32 8.8026	0.9257 106.44 8.8125	0.9268 106.56 8.8222	0.9278 106.68 8.8319	0.9288 106.79 8.8415	0.9298 106.91 8.8511	0.9308 107.02 8.8605	0.9318 107.14 8.8698	
106.8 192.24 62.804					0.9237 106.21 8.7928	0.9242 106.27 8.7978	0.9253 106.39 8.8077	0.9263 106.50 8.8176	0.9273 106.62 8.8273	0.9283 106.74 8.8369	0.9293 106.85 8.8465	0.9303 106.97 8.8559	0.9313 107.08 8.8653	
106.9 192.42 63.265					0.9232 106.15 8.7881	0.9237 106.21 8.7931	0.9248 106.33 8.8030	0.9258 106.45 8.8129	0.9268 106.57 8.8226	0.9278 106.68 8.8323	0.9288 106.80 8.8419	0.9298 106.91 8.8513	0.9308 107.03 8.8607	
107.0 192.60 63.728					0.9227 106.09 8.7833	0.9232 106.15 8.7883	0.9243 106.27 8.7983	0.9253 106.39 8.8082	0.9263 106.51 8.8180	0.9273 106.63 8.8276	0.9284 106.74 8.8373	0.9294 106.86 8.8468	0.9303 106.97 8.8562	
107.1 192.78 64.193					0.9222 106.03 8.7785	0.9227 106.09 8.7836	0.9238 106.21 8.7936	0.9248 106.33 8.8035	0.9258 106.45 8.8133	0.9269 106.57 8.8230	0.9279 106.69 8.8326	0.9289 106.80 8.8422	0.9299 106.92 8.8516	
107.2 192.96 64.661					0.9217 105.97 8.7737	0.9222 106.04 8.7788	0.9233 106.16 8.7888	0.9243 106.28 8.7988	0.9253 106.40 8.8086	0.9264 106.51 8.8184	0.9274 106.63 8.8280	0.9284 106.75 8.8376	0.9294 106.86 8.8471	
107.3 193.14 65.132					0.9212 105.92 8.7689	0.9217 105.98 8.7740	0.9228 106.10 8.7841	0.9238 106.22 8.7941	0.9249 106.34 8.8039	0.9259 106.46 8.8137	0.9269 106.57 8.8234	0.9279 106.69 8.8330	0.9289 106.81 8.8425	
107.4 193.32 65.605					0.9207 105.86 8.7641	0.9212 105.92 8.7692	0.9223 106.04 8.7793	0.9233 106.16 8.7893	0.9244 106.28 8.7992	0.9254 106.40 8.8090	0.9264 106.52 8.8188	0.9274 106.63 8.8284	0.9284 106.75 8.8379	
107.5 193.50 66.080					0.9202 105.80 8.7593	0.9207 105.86 8.7644	0.9218 105.98 8.7746	0.9228 106.11 8.7846	0.9239 106.23 8.7945	0.9249 106.34 8.8044	0.9259 106.46 8.8141	0.9269 106.58 8.8238	0.9279 106.69 8.8333	
107.6 193.68 66.558					0.9197 105.74 8.7545	0.9202 105.80 8.7597	0.9213 105.93 8.7698	0.9223 106.05 8.7799	0.9234 106.17 8.7899	0.9244 106.29 8.7997	0.9254 106.41 8.8095	0.9265 106.52 8.8192	0.9275 106.64 8.8288	
107.7 193.86 67.039					0.9192 105.68 8.7497	0.9197 105.75 8.7549	0.9208 105.87 8.7651	0.9218 105.99 8.7752	0.9229 106.11 8.7852	0.9239 106.23 8.7950	0.9249 106.35 8.8048	0.9260 106.47 8.8146	0.9270 106.58 8.8242	
107.8 194.04 67.522					0.9187 105.63 8.7449	0.9192 105.69 8.7501	0.9203 105.81 8.7603	0.9213 105.93 8.7704	0.9224 106.06 8.7804	0.9234 106.18 8.7904	0.9245 106.29 8.8002	0.9255 106.41 8.8099	0.9265 106.53 8.8196	
107.9 194.22 68.008					0.9181 105.57 8.7401	0.9187 105.63 8.7453	0.9198 105.75 8.7555	0.9208 105.88 8.7657	0.9219 106.00 8.7757	0.9229 106.12 8.7857	0.9240 106.24 8.7955	0.9250 106.36 8.8053	0.9260 106.47 8.8150	

				TABLE ENTRIES										
1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA				1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL										
PSIA	12.000	14.696	25.000	50.000	75.000	100.000	150.000	200.000	250.000	300.000	350.000	400.000	450.000	
ATM.	0.817	1.000	1.701	3.402	5.103	6.805	10.207	13.609	17.011	20.414	23.816	27.218	30.621	
108.0 194.40 68.496					0.9176 105.51 8.7353	0.9182 105.57 8.7404	0.9193 105.70 8.7507	0.9203 105.82 8.7609	0.9214 105.94 8.7710	0.9224 106.06 8.7810	0.9235 106.18 8.7909	0.9245 106.30 8.8007	0.9255 106.42 8.8104	
108.1 194.58 68.987					0.9171 105.45 8.7304	0.9177 105.51 8.7356	0.9188 105.64 8.7460	0.9198 105.76 8.7562	0.9209 105.88 8.7663	0.9219 106.01 8.7763	0.9230 106.13 8.7862	0.9240 106.24 8.7961	0.9250 106.36 8.8058	
108.2 194.76 69.480					0.9166 105.39 8.7256	0.9172 105.46 8.7308	0.9183 105.58 8.7412	0.9193 105.70 8.7514	0.9204 105.83 8.7616	0.9215 105.95 8.7716	0.9225 106.07 8.7816	0.9235 106.19 8.7914	0.9246 106.31 8.8012	
108.3 194.94 69.977					0.9161 105.33 8.7207	0.9167 105.40 8.7260	0.9178 105.52 8.7364	0.9188 105.65 8.7467	0.9199 105.77 8.7568	0.9210 105.89 8.7669	0.9220 106.01 8.7769	0.9230 106.13 8.7868	0.9241 106.25 8.7965	
108.4 195.12 70.475					0.9156 105.28 8.7159	0.9162 105.34 8.7211	0.9172 105.47 8.7316	0.9183 105.59 8.7419	0.9194 105.71 8.7521	0.9205 105.84 8.7622	0.9215 105.96 8.7722	0.9226 106.08 8.7821	0.9236 106.19 8.7919	
108.5 195.30 70.976					0.9151 105.22 8.7110	0.9156 105.28 8.7163	0.9167 105.41 8.7268	0.9178 105.53 8.7371	0.9189 105.66 8.7474	0.9200 105.78 8.7575	0.9210 105.90 8.7675	0.9221 106.02 8.7775	0.9231 106.14 8.7873	
108.6 195.48 71.480					0.9146 105.16 8.7062	0.9151 105.22 8.7115	0.9162 105.35 8.7219	0.9173 105.47 8.7323	0.9184 105.60 8.7426	0.9195 105.72 8.7528	0.9205 105.84 8.7628	0.9216 105.96 8.7728	0.9226 106.08 8.7827	
108.7 195.66 71.987					0.9141 105.10 8.7013	0.9146 105.16 8.7066	0.9157 105.29 8.7171	0.9168 105.42 8.7275	0.9179 105.54 8.7378	0.9190 105.66 8.7481	0.9200 105.79 8.7582	0.9211 105.91 8.7682	0.9221 106.03 8.7781	
108.8 195.84 72.496					0.9136 105.04 8.6964	0.9141 105.10 8.7017	0.9152 105.23 8.7123	0.9163 105.36 8.7227	0.9174 105.48 8.7331	0.9185 105.61 8.7433	0.9195 105.73 8.7535	0.9206 105.85 8.7635	0.9216 105.97 8.7734	
108.9 196.02 73.008					0.9130 104.98 8.6915	0.9136 105.05 8.6969	0.9147 105.17 8.7075	0.9158 105.30 8.7180	0.9169 105.43 8.7283	0.9180 105.55 8.7386	0.9191 105.67 8.7488	0.9201 105.79 8.7589	0.9212 105.91 8.7688	
109.0 196.20 73.522					0.9125 104.92 8.6866	0.9131 104.99 8.6920	0.9142 105.12 8.7026	0.9153 105.24 8.7132	0.9164 105.37 8.7236	0.9175 105.49 8.7339	0.9186 105.62 8.7440	0.9196 105.74 8.7541	0.9207 105.86 8.7641	
109.1 196.38 74.039					0.9120 104.86 8.6818	0.9126 104.93 8.6871	0.9137 105.06 8.6978	0.9148 105.18 8.7083	0.9159 105.31 8.7188	0.9170 105.44 8.7291	0.9181 105.56 8.7393	0.9191 105.68 8.7495	0.9202 105.80 8.7595	
109.2 196.56 74.559					0.9115 104.80 8.6769	0.9121 104.87 8.6822	0.9132 105.00 8.6929	0.9143 105.13 8.7035	0.9154 105.25 8.7140	0.9165 105.38 8.7244	0.9176 105.50 8.7346	0.9186 105.62 8.7448	0.9197 105.75 8.7548	
109.3 196.74 75.081						0.9116 104.81 8.6774	0.9127 104.94 8.6881	0.9138 105.07 8.6987	0.9149 105.20 8.7092	0.9160 105.32 8.7196	0.9171 105.45 8.7299	0.9181 105.57 8.7401	0.9192 105.69 8.7502	
109.4 196.92 75.606						0.9110 104.75 8.6725	0.9122 104.88 8.6832	0.9133 105.01 8.6939	0.9144 105.14 8.7044	0.9155 105.26 8.7149	0.9166 105.39 8.7252	0.9177 105.51 8.7354	0.9187 105.63 8.7455	
109.5 197.10 76.134						0.9105 104.69 8.6676	0.9117 104.82 8.6784	0.9128 104.95 8.6891	0.9139 105.08 8.6996	0.9150 105.21 8.7101	0.9161 105.33 8.7204	0.9172 105.45 8.7307	0.9182 105.58 8.7408	
109.6 197.28 76.664						0.9100 104.63 8.6627	0.9111 104.76 8.6735	0.9123 104.89 8.6842	0.9134 105.02 8.6948	0.9145 105.15 8.7053	0.9156 105.27 8.7157	0.9167 105.40 8.7260	0.9177 105.52 8.7362	
109.7 197.46 77.197						0.9095 104.57 8.6577	0.9106 104.70 8.6686	0.9118 104.83 8.6794	0.9129 104.96 8.6900	0.9140 105.09 8.7005	0.9151 105.22 8.7110	0.9162 105.34 8.7213	0.9172 105.46 8.7315	
109.8 197.64 77.733						0.9090 104.51 8.6528	0.9101 104.65 8.6637	0.9113 104.78 8.6745	0.9124 104.91 8.6852	0.9135 105.03 8.6958	0.9146 105.16 8.7062	0.9157 105.28 8.7166	0.9167 105.41 8.7268	
109.9 197.82 78.272						0.9085 104.45 8.6479	0.9096 104.59 8.6589	0.9107 104.72 8.6697	0.9119 104.85 8.6804	0.9130 104.97 8.6910	0.9141 105.10 8.7015	0.9152 105.23 8.7118	0.9163 105.35 8.7221	

TABLE 4 - CONTINUED

DENSITY OF COMPRESSED LIQUID OXYGEN - CONTINUED

1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA		TABLE ENTRIES											
		1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL											
PSIA	12.000	14.696	25.000	50.000	75.000	100.000	150.000	200.000	250.000	300.000	350.000	400.000	450.000
ATM.	0.817	1.000	1.701	3.402	5.103	6.805	10.207	13.609	17.011	20.414	23.816	27.218	30.621
110.0 198.00 78.813						0.9079 104.40 8.6430	0.9091 104.53 8.6540	0.9102 104.66 8.6648	0.9114 104.79 8.6756	0.9125 105.04 8.6862	0.9136 105.17 8.6967	0.9147 105.29 8.7071	0.9158 105.29 8.7174
110.1 198.18 79.357						0.9074 104.34 8.6380	0.9086 104.47 8.6491	0.9097 104.60 8.6599	0.9109 104.73 8.6707	0.9120 104.86 8.6814	0.9131 104.99 8.6919	0.9142 105.11 8.7024	0.9153 105.24 8.7127
110.2 198.36 79.904						0.9069 104.28 8.6331	0.9081 104.41 8.6441	0.9092 104.54 8.6551	0.9103 104.67 8.6659	0.9115 104.80 8.6766	0.9126 104.93 8.6872	0.9137 105.06 8.6976	0.9148 105.18 8.7080
110.3 198.54 80.453						0.9064 104.22 8.6281	0.9075 104.35 8.6392	0.9087 104.48 8.6502	0.9098 104.61 8.6610	0.9110 104.74 8.6718	0.9121 104.87 8.6824	0.9132 105.00 8.6929	0.9143 105.12 8.7033
110.4 198.72 81.006						0.9059 104.16 8.6232	0.9070 104.29 8.6343	0.9082 104.42 8.6453	0.9093 104.55 8.6562	0.9105 104.68 8.6670	0.9116 104.81 8.6776	0.9127 104.94 8.6881	0.9138 105.07 8.6986
110.5 198.90 81.561						0.9053 104.10 8.6182	0.9065 104.23 8.6294	0.9077 104.36 8.6404	0.9088 104.50 8.6513	0.9100 104.63 8.6621	0.9111 104.76 8.6728	0.9122 104.88 8.6834	0.9133 105.01 8.6938
110.6 199.08 82.118						0.9048 104.04 8.6132	0.9060 104.17 8.6245	0.9072 104.31 8.6355	0.9083 104.44 8.6465	0.9094 104.57 8.6573	0.9106 104.70 8.6680	0.9117 104.83 8.6786	0.9128 104.95 8.6891
110.7 199.26 82.679						0.9043 103.98 8.6083	0.9055 104.11 8.6195	0.9066 104.25 8.6306	0.9078 104.38 8.6416	0.9089 104.51 8.6525	0.9101 104.64 8.6632	0.9112 104.77 8.6739	0.9123 104.90 8.6844
110.8 199.44 83.242						0.9038 103.92 8.6033	0.9050 104.05 8.6146	0.9061 104.19 8.6257	0.9073 104.32 8.6367	0.9084 104.45 8.6476	0.9096 104.58 8.6584	0.9107 104.71 8.6691	0.9118 104.84 8.6797
110.9 199.62 83.809						0.9032 103.86 8.5983	0.9044 103.99 8.6096	0.9056 104.13 8.6208	0.9068 104.26 8.6319	0.9079 104.39 8.6428	0.9091 104.52 8.6536	0.9102 104.65 8.6643	0.9113 104.78 8.6749
111.0 199.80 84.378						0.9027 103.80 8.5933	0.9039 103.93 8.6047	0.9051 104.07 8.6159	0.9063 104.20 8.6270	0.9074 104.33 8.6380	0.9086 104.47 8.6488	0.9097 104.60 8.6595	0.9108 104.72 8.6702
111.1 199.98 84.949						0.9022 103.73 8.5883	0.9034 103.87 8.5997	0.9046 104.01 8.6110	0.9057 104.14 8.6221	0.9069 104.28 8.6331	0.9080 104.41 8.6440	0.9092 104.54 8.6548	0.9103 104.67 8.6654
111.2 200.16 85.524						0.9017 103.67 8.5833	0.9029 103.81 8.5947	0.9041 103.95 8.6060	0.9052 104.08 8.6172	0.9064 104.22 8.6282	0.9075 104.35 8.6392	0.9087 104.48 8.6500	0.9098 104.61 8.6607
111.3 200.34 86.102						0.9011 103.61 8.5783	0.9024 103.75 8.5897	0.9035 103.89 8.6011	0.9047 104.02 8.6123	0.9059 104.16 8.6234	0.9070 104.29 8.6343	0.9082 104.42 8.6452	0.9093 104.55 8.6559
111.4 200.52 86.682						0.9006 103.55 8.5732	0.9018 103.69 8.5848	0.9030 103.83 8.5961	0.9042 103.97 8.6074	0.9054 104.10 8.6185	0.9065 104.23 8.6295	0.9077 104.36 8.6404	0.9088 104.49 8.6511
111.5 200.70 87.265						0.9001 103.49 8.5682	0.9013 103.63 8.5798	0.9025 103.77 8.5912	0.9037 103.91 8.6025	0.9049 104.04 8.6136	0.9060 104.17 8.6247	0.9072 104.31 8.6356	0.9083 104.44 8.6464
111.6 200.88 87.851						0.8996 103.43 8.5632	0.9008 103.57 8.5748	0.9020 103.71 8.5862	0.9032 103.85 8.5976	0.9043 103.98 8.6087	0.9055 104.12 8.6198	0.9067 104.25 8.6308	0.9078 104.38 8.6415
111.7 201.06 88.440						0.8990 103.37 8.5581	0.9003 103.51 8.5698	0.9015 103.65 8.5813	0.9027 103.79 8.5926	0.9038 103.92 8.6039	0.9050 104.06 8.6150	0.9062 104.19 8.6259	0.9073 104.32 8.6368
111.8 201.24 89.032						0.8985 103.31 8.5531	0.8997 103.45 8.5648	0.9009 103.59 8.5763	0.9021 103.73 8.5877	0.9033 103.86 8.5990	0.9045 104.00 8.6101	0.9056 104.13 8.6211	0.9068 104.26 8.6320
111.9 201.42 89.627						0.8980 103.25 8.5480	0.8992 103.39 8.5597	0.9004 103.53 8.5713	0.9016 103.67 8.5828	0.9028 103.80 8.5941	0.9040 103.94 8.6052	0.9051 104.07 8.6163	0.9063 104.20 8.6272

1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA		TABLE ENTRIES 1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL											
PSIA ATM.	12.000 0.817	14.696 1.000	25.000 1.701	50.000 3.402	75.000 5.103	100.000 6.805	150.000 10.207	200.000 13.609	250.000 17.011	300.000 20.414	350.000 23.816	400.000 27.218	450.000 30.621
112.0 201.60 90.224						0.8974 103.19 8.5430	0.8987 103.33 8.5547	0.8999 103.47 8.5653	0.9011 103.61 8.5778	0.9023 103.74 8.5891	0.9035 103.88 8.6004	0.9046 104.01 8.6114	0.9058 104.15 8.6224
112.1 201.78 90.825						0.8969 103.13 8.5379	0.8981 103.27 8.5497	0.8994 103.41 8.5613	0.9006 103.55 8.5729	0.9018 103.69 8.5842	0.9030 103.82 8.5955	0.9041 103.96 8.6066	0.9053 104.09 8.6176
112.2 201.96 91.428						0.8964 103.06 8.5328	0.8976 103.21 8.5447	0.8988 103.35 8.5563	0.9001 103.49 8.5679	0.9013 103.63 8.5793	0.9024 103.76 8.5906	0.9036 103.90 8.6018	0.9048 104.03 8.6128
112.3 202.14 92.034						0.8958 103.00 8.5277	0.8971 103.15 8.5396	0.8983 103.29 8.5513	0.8995 103.43 8.5629	0.9007 103.57 8.5744	0.9019 103.70 8.5857	0.9031 103.84 8.5969	0.9043 103.97 8.6080
112.4 202.32 92.644						0.8953 102.94 8.5226	0.8966 103.09 8.5346	0.8978 103.23 8.5463	0.8990 103.37 8.5580	0.9002 103.51 8.5695	0.9014 103.64 8.5808	0.9026 103.78 8.5920	0.9038 103.91 8.6031
112.5 202.50 93.256						0.8948 102.88 8.5175	0.8960 103.02 8.5295	0.8973 103.17 8.5413	0.8985 103.31 8.5530	0.8997 103.45 8.5645	0.9009 103.59 8.5759	0.9021 103.72 8.5872	0.9033 103.86 8.5983
112.6 202.68 93.871						0.8942 102.82 8.5124	0.8955 102.96 8.5244	0.8967 103.11 8.5363	0.8980 103.25 8.5480	0.8992 103.39 8.5596	0.9004 103.53 8.5710	0.9016 103.66 8.5823	0.9027 103.80 8.5935
112.7 202.86 94.489						0.8937 102.76 8.5073	0.8950 102.90 8.5194	0.8962 103.05 8.5313	0.8974 103.19 8.5430	0.8987 103.33 8.5546	0.8999 103.47 8.5661	0.9011 103.60 8.5774	0.9022 103.74 8.5886
112.8 203.04 95.110						0.8932 102.69 8.5022	0.8944 102.84 8.5143	0.8957 102.98 8.5262	0.8969 103.13 8.5380	0.8981 103.27 8.5497	0.8993 103.41 8.5612	0.9005 103.54 8.5725	0.9017 103.68 8.5838
112.9 203.22 95.734						0.8926 102.63 8.4971	0.8939 102.78 8.5092	0.8951 102.92 8.5212	0.8964 103.07 8.5330	0.8976 103.21 8.5447	0.8988 103.35 8.5562	0.9000 103.49 8.5677	0.9012 103.62 8.5789
113.0 203.40 96.361						0.8921 102.57 8.4919	0.8934 102.72 8.5041	0.8946 102.86 8.5161	0.8959 103.01 8.5280	0.8971 103.15 8.5397	0.8983 103.29 8.5513	0.8995 103.43 8.5628	0.9007 103.56 8.5741
113.1 203.58 96.991						0.8915 102.51 8.4868	0.8928 102.66 8.4990	0.8941 102.80 8.5111	0.8953 102.95 8.5230	0.8966 103.09 8.5347	0.8978 103.23 8.5464	0.8990 103.37 8.5579	0.9002 103.50 8.5692
113.2 203.76 97.624						0.8910 102.45 8.4816	0.8923 102.59 8.4939	0.8936 102.74 8.5060	0.8948 102.89 8.5180	0.8960 103.03 8.5298	0.8973 103.17 8.5414	0.8985 103.31 8.5530	0.8997 103.45 8.5643
113.3 203.94 98.260						0.8904 102.38 8.4765	0.8917 102.53 8.4888	0.8930 102.68 8.5009	0.8943 102.82 8.5129	0.8955 102.97 8.5248	0.8968 103.11 8.5365	0.8980 103.25 8.5480	0.8992 103.39 8.5595
113.4 204.12 98.899						0.8899 102.32 8.4713	0.8912 102.47 8.4836	0.8925 102.62 8.4958	0.8938 102.76 8.5079	0.8950 102.91 8.5198	0.8962 103.05 8.5315	0.8975 103.19 8.5431	0.8987 103.33 8.5546
113.5 204.30 99.541						0.8894 102.26 8.4661	0.8907 102.41 8.4785	0.8920 102.56 8.4908	0.8932 102.70 8.5028	0.8945 102.85 8.5148	0.8957 102.99 8.5266	0.8969 103.13 8.5382	0.8981 103.27 8.5497
113.6 204.48 100.186							0.8901 102.35 8.4734	0.8914 102.49 8.4857	0.8927 102.64 8.4978	0.8939 102.79 8.5098	0.8952 102.93 8.5216	0.8964 103.07 8.5333	0.8976 103.21 8.5448
113.7 204.66 100.834							0.8896 102.28 8.4682	0.8909 102.43 8.4806	0.8922 102.58 8.4927	0.8934 102.73 8.5047	0.8947 102.87 8.5166	0.8959 103.01 8.5283	0.8971 103.15 8.5399
113.8 204.84 101.485							0.8890 102.22 8.4631	0.8903 102.37 8.4755	0.8916 102.52 8.4877	0.8929 102.66 8.4997	0.8941 102.81 8.5116	0.8954 102.95 8.5234	0.8966 103.09 8.5350
113.9 205.02 102.139							0.8885 102.16 8.4579	0.8898 102.31 8.4703	0.8911 102.46 8.4826	0.8924 102.60 8.4947	0.8936 102.75 8.5066	0.8949 102.89 8.5184	0.8961 103.03 8.5301

TABLE 4 - CONTINUED

DENSITY OF COMPRESSED LIQUID OXYGEN - CONTINUED

1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA				TABLE ENTRIES										
				1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, L/GAL										
PSIA	12.000	14.696	25.000	50.000	75.000	100.000	150.000	200.000	250.000	300.000	350.000	400.000	450.000	
ATM.	0.817	1.000	1.701	3.402	5.103	6.805	10.207	13.609	17.011	20.414	23.816	27.218	30.621	
114.0 205.20 102.797							0.8880 102.10 8.4527	0.8893 102.25 8.4652	0.8906 102.40 8.4775	0.8918 102.54 8.4896	0.8931 102.69 8.5016	0.8943 102.83 8.5135	0.8956 102.97 8.5252	
114.1 205.38 103.457							0.8874 102.03 8.4476	0.8887 102.19 8.4601	0.8900 102.34 8.4724	0.8913 102.48 8.4846	0.8926 102.63 8.4966	0.8938 102.77 8.5085	0.8951 102.91 8.5203	
114.2 205.56 104.120							0.8869 101.97 8.4424	0.8882 102.12 8.4549	0.8895 102.27 8.4673	0.8908 102.42 8.4796	0.8920 102.57 8.4916	0.8933 102.71 8.5035	0.8945 102.85 8.5153	
114.3 205.74 104.787							0.8863 101.91 8.4372	0.8876 102.06 8.4498	0.8890 102.21 8.4622	0.8902 102.36 8.4745	0.8915 102.51 8.4866	0.8928 102.65 8.4986	0.8940 102.79 8.5104	
114.4 205.92 105.456							0.8858 101.85 8.4320	0.8871 102.00 8.4446	0.8884 102.15 8.4571	0.8897 102.30 8.4694	0.8910 102.45 8.4816	0.8922 102.59 8.4936	0.8935 102.73 8.5054	
114.5 206.10 106.129							0.8852 101.79 8.4268	0.8866 101.94 8.4395	0.8879 102.09 8.4520	0.8892 102.24 8.4644	0.8905 102.38 8.4766	0.8917 102.53 8.4886	0.8930 102.67 8.5005	
114.6 206.28 106.805							0.8847 101.72 8.4216	0.8860 101.87 8.4343	0.8873 102.03 8.4469	0.8886 102.18 8.4593	0.8899 102.32 8.4715	0.8912 102.47 8.4836	0.8925 102.61 8.4955	
114.7 206.46 107.484							0.8841 101.66 8.4163	0.8855 101.81 8.4291	0.8868 101.96 8.4417	0.8881 102.11 8.4542	0.8894 102.26 8.4665	0.8907 102.41 8.4786	0.8919 102.55 8.4906	
114.8 206.64 108.166							0.8836 101.59 8.4111	0.8849 101.75 8.4239	0.8863 101.90 8.4366	0.8876 102.05 8.4491	0.8889 102.20 8.4614	0.8901 102.35 8.4736	0.8914 102.49 8.4856	
114.9 206.82 108.851							0.8830 101.53 8.4059	0.8844 101.69 8.4188	0.8857 101.84 8.4315	0.8870 101.99 8.4440	0.8883 102.14 8.4564	0.8896 102.29 8.4686	0.8909 102.43 8.4806	
115.0 207.00 109.539							0.8825 101.47 8.4006	0.8838 101.62 8.4136	0.8852 101.78 8.4263	0.8865 101.93 8.4389	0.8878 102.08 8.4513	0.8891 102.23 8.4636	0.8904 102.37 8.4756	
115.1 207.18 110.231							0.8819 101.40 8.3954	0.8833 101.56 8.4083	0.8846 101.72 8.4211	0.8860 101.87 8.4338	0.8873 102.02 8.4462	0.8886 102.17 8.4585	0.8898 102.31 8.4707	
115.2 207.36 110.925							0.8814 101.34 8.3901	0.8827 101.50 8.4031	0.8841 101.65 8.4160	0.8854 101.81 8.4286	0.8867 101.96 8.4411	0.8880 102.11 8.4535	0.8893 102.25 8.4657	
115.3 207.54 111.623							0.8808 101.28 8.3848	0.8822 101.44 8.3979	0.8836 101.59 8.4108	0.8849 101.74 8.4235	0.8862 101.90 8.4361	0.8875 102.05 8.4484	0.8888 102.19 8.4607	
115.4 207.72 112.324							0.8803 101.21 8.3796	0.8816 101.37 8.3927	0.8830 101.53 8.4056	0.8843 101.68 8.4184	0.8857 101.83 8.4310	0.8870 101.98 8.4434	0.8883 102.13 8.4557	
115.5 207.90 113.029							0.8797 101.15 8.3743	0.8811 101.31 8.3874	0.8825 101.47 8.4004	0.8838 101.62 8.4132	0.8851 101.77 8.4259	0.8864 101.92 8.4383	0.8877 102.07 8.4506	
115.6 208.08 113.736							0.8792 101.09 8.3690	0.8805 101.25 8.3822	0.8819 101.40 8.3952	0.8833 101.56 8.4081	0.8846 101.71 8.4208	0.8859 101.86 8.4333	0.8872 102.01 8.4456	
115.7 208.26 114.447							0.8786 101.02 8.3637	0.8800 101.18 8.3769	0.8814 101.34 8.3900	0.8827 101.50 8.4029	0.8841 101.65 8.4156	0.8854 101.80 8.4282	0.8867 101.95 8.4406	
115.8 208.44 115.160							0.8780 100.96 8.3583	0.8794 101.12 8.3717	0.8808 101.28 8.3848	0.8822 101.43 8.3978	0.8835 101.59 8.4105	0.8848 101.74 8.4231	0.8862 101.89 8.4356	
115.9 208.62 115.877							0.8775 100.89 8.3533	0.8789 101.05 8.3664	0.8803 101.21 8.3796	0.8816 101.37 8.3926	0.8830 101.53 8.4054	0.8843 101.68 8.4180	0.8856 101.83 8.4305	

				TABLE ENTRIES										
1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA				1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL										
PSIA	12.000	14.696	25.000	50.000	75.000	100.000	150.000	200.000	250.000	300.000	350.000	400.000	450.000	
ATM.	0.817	1.000	1.701	3.402	5.103	6.805	10.207	13.609	17.011	20.414	23.816	27.218	30.621	
116.0 208.80 116.598							0.8769 100.83 8.3477	0.8783 100.99 8.3611	0.8797 101.15 8.3743	0.8811 101.31 8.3874	0.8824 101.46 8.4003	0.8838 101.62 8.4129	0.8851 101.77 8.4255	
116.1 208.98 117.321							0.8764 100.76 8.3423	0.8778 100.93 8.3558	0.8792 101.09 8.3691	0.8805 101.25 8.3822	0.8819 101.40 8.3951	0.8832 101.56 8.4078	0.8846 101.71 8.4204	
116.2 209.16 118.048							0.8758 100.70 8.3370	0.8772 100.86 8.3505	0.8786 101.02 8.3639	0.8800 101.18 8.3770	0.8814 101.34 8.3900	0.8827 101.49 8.4027	0.8840 101.65 8.4154	
116.3 209.34 118.778							0.8752 100.63 8.3316	0.8767 100.80 8.3452	0.8781 100.96 8.3586	0.8795 101.12 8.3718	0.8808 101.28 8.3848	0.8822 101.43 8.3976	0.8835 101.58 8.4103	
116.4 209.52 119.511							0.8747 100.57 8.3263	0.8761 100.73 8.3399	0.8775 100.90 8.3533	0.8789 101.06 8.3666	0.8803 101.21 8.3796	0.8816 101.37 8.3925	0.8830 101.52 8.4052	
116.5 209.70 120.248							0.8741 100.50 8.3209	0.8755 100.67 8.3346	0.8770 100.83 8.3481	0.8784 100.99 8.3614	0.8797 101.15 8.3745	0.8811 101.31 8.3874	0.8824 101.46 8.4001	
116.6 209.88 120.988							0.8735 100.44 8.3155	0.8750 100.61 8.3292	0.8764 100.77 8.3428	0.8778 100.93 8.3561	0.8792 101.09 8.3693	0.8806 101.25 8.3822	0.8819 101.40 8.3950	
116.7 210.06 121.731							0.8730 100.37 8.3101	0.8744 100.54 8.3239	0.8759 100.71 8.3375	0.8773 100.87 8.3509	0.8786 101.03 8.3641	0.8800 101.18 8.3771	0.8814 101.34 8.3899	
116.8 210.24 122.478							0.8724 100.31 8.3047	0.8739 100.48 8.3186	0.8753 100.64 8.3322	0.8767 100.80 8.3456	0.8781 100.96 8.3589	0.8795 101.12 8.3719	0.8808 101.28 8.3848	
116.9 210.42 123.227							0.8718 100.24 8.2993	0.8733 100.41 8.3132	0.8747 100.58 8.3269	0.8762 100.74 8.3404	0.8776 100.90 8.3537	0.8789 101.06 8.3668	0.8803 101.22 8.3797	
117.0 210.60 123.981							0.8713 100.18 8.2939	0.8727 100.35 8.3078	0.8742 100.51 8.3216	0.8756 100.68 8.3351	0.8770 100.84 8.3485	0.8784 101.00 8.3616	0.8797 101.15 8.3746	
117.1 210.78 124.737							0.8707 100.11 8.2884	0.8722 100.28 8.3025	0.8736 100.45 8.3163	0.8750 100.61 8.3299	0.8765 100.77 8.3432	0.8778 100.93 8.3565	0.8792 101.09 8.3695	
117.2 210.96 125.497							0.8701 100.05 8.2830	0.8716 100.22 8.2971	0.8731 100.38 8.3109	0.8745 100.55 8.3246	0.8759 100.71 8.3380	0.8773 100.87 8.3513	0.8787 101.03 8.3643	
117.3 211.14 126.260							0.8696 99.98 8.2775	0.8710 100.15 8.2917	0.8725 100.32 8.3056	0.8739 100.49 8.3193	0.8754 100.65 8.3328	0.8768 100.81 8.3461	0.8781 100.97 8.3592	
117.4 211.32 127.026							0.8690 99.92 8.2721	0.8705 100.09 8.2863	0.8719 100.26 8.3002	0.8734 100.42 8.3140	0.8748 100.59 8.3275	0.8762 100.75 8.3409	0.8776 100.91 8.3540	
117.5 211.50 127.796							0.8684 99.85 8.2665	0.8699 100.02 8.2809	0.8714 100.19 8.2949	0.8728 100.36 8.3087	0.8743 100.52 8.3223	0.8757 100.68 8.3357	0.8770 100.84 8.3489	
117.6 211.68 128.569							0.8678 99.78 8.2611	0.8693 99.96 8.2754	0.8708 100.13 8.2895	0.8723 100.29 8.3034	0.8737 100.46 8.3170	0.8751 100.62 8.3305	0.8765 100.78 8.3437	
117.7 211.86 129.346							0.8673 99.72 8.2556	0.8688 99.89 8.2700	0.8702 100.06 8.2841	0.8717 100.23 8.2980	0.8731 100.39 8.3117	0.8746 100.56 8.3253	0.8760 100.72 8.3386	
117.8 212.04 130.126							0.8667 99.65 8.2501	0.8682 99.82 8.2646	0.8697 100.00 8.2787	0.8711 100.16 8.2927	0.8726 100.33 8.3065	0.8740 100.49 8.3200	0.8754 100.66 8.3334	
117.9 212.22 130.909							0.8661 99.58 8.2446	0.8676 99.76 8.2591	0.8691 99.93 8.2734	0.8706 100.10 8.2874	0.8720 100.27 8.3012	0.8735 100.43 8.3148	0.8749 100.59 8.3282	

TABLE 4 - CONTINUED

DENSITY OF COMPRESSED LIQUID OXYGEN - CONTINUED

1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA		TABLE ENTRIES											
		1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL											
PSIA ATM.	12.000 0.817	14.696 1.000	25.000 1.701	50.000 3.402	75.000 5.103	100.000 6.805	150.000 10.207	200.000 13.609	250.000 17.011	300.000 20.414	350.000 23.816	400.000 27.218	450.000 30.621
118.0 212.40 131.696							0.8655 99.52 8.2391	0.8670 99.69 8.2537	0.8685 99.87 8.2680	0.8700 100.04 8.2820	0.8715 100.20 8.2959	0.8729 100.37 8.3095	0.8743 100.53 8.3230
118.1 212.58 132.487							0.8649 99.45 8.2336	0.8665 99.63 8.2482	0.8680 99.80 8.2625	0.8695 99.97 8.2767	0.8709 100.14 8.2906	0.8724 100.30 8.3043	0.8738 100.47 8.3178
118.2 212.76 133.280							0.8644 99.38 8.2280	0.8659 99.56 8.2427	0.8674 99.73 8.2571	0.8689 99.91 8.2713	0.8704 100.07 8.2853	0.8718 100.24 8.2990	0.8732 100.40 8.3126
118.3 212.94 134.077							0.8638 99.32 8.2225	0.8653 99.49 8.2372	0.8668 99.67 8.2517	0.8683 99.84 8.2659	0.8698 100.01 8.2800	0.8713 100.18 8.2938	0.8727 100.34 8.3074
118.4 213.12 134.878							0.8632 99.25 8.2169	0.8647 99.43 8.2317	0.8663 99.60 8.2462	0.8678 99.78 8.2605	0.8692 99.95 8.2746	0.8707 100.11 8.2885	0.8721 100.28 8.3021
118.5 213.30 135.682							0.8626 99.18 8.2114	0.8642 99.36 8.2262	0.8657 99.54 8.2408	0.8672 99.71 8.2552	0.8687 99.88 8.2693	0.8701 100.05 8.2832	0.8716 100.22 8.2969
118.6 213.48 136.489							0.8620 99.11 8.2058	0.8636 99.29 8.2207	0.8651 99.47 8.2353	0.8666 99.65 8.2498	0.8681 99.82 8.2639	0.8696 99.99 8.2779	0.8710 100.15 8.2917
118.7 213.66 137.300							0.8614 99.05 8.2002	0.8630 99.23 8.2152	0.8645 99.41 8.2299	0.8661 99.58 8.2443	0.8676 99.75 8.2586	0.8690 99.92 8.2726	0.8705 100.09 8.2864
118.8 213.84 138.114							0.8608 98.98 8.1946	0.8624 99.16 8.2096	0.8640 99.34 8.2244	0.8655 99.51 8.2389	0.8670 99.69 8.2532	0.8685 99.86 8.2673	0.8699 100.02 8.2812
118.9 214.02 138.932							0.8603 98.91 8.1890	0.8618 99.09 8.2041	0.8634 99.27 8.2189	0.8649 99.45 8.2335	0.8664 99.62 8.2478	0.8679 99.79 8.2620	0.8694 99.96 8.2759
119.0 214.20 139.754							0.8597 98.84 8.1834	0.8613 99.03 8.1985	0.8628 99.21 8.2134	0.8644 99.38 8.2281	0.8659 99.56 8.2425	0.8674 99.73 8.2567	0.8688 99.90 8.2706
119.1 214.38 140.579							0.8591 98.78 8.1777	0.8607 98.96 8.1929	0.8622 99.14 8.2079	0.8638 99.32 8.2226	0.8653 99.49 8.2371	0.8668 99.66 8.2513	0.8683 99.83 8.2653
119.2 214.56 141.407							0.8585 98.71 8.1721	0.8601 98.89 8.1874	0.8617 99.07 8.2024	0.8632 99.25 8.2172	0.8647 99.43 8.2317	0.8662 99.60 8.2460	0.8677 99.77 8.2600
119.3 214.74 142.239							0.8579 98.64 8.1664	0.8595 98.82 8.1818	0.8611 99.01 8.1969	0.8626 99.19 8.2117	0.8642 99.36 8.2263	0.8657 99.54 8.2406	0.8672 99.71 8.2547
119.4 214.92 143.074							0.8573 98.57 8.1608	0.8589 98.76 8.1762	0.8605 98.94 8.1913	0.8621 99.12 8.2062	0.8636 99.30 8.2209	0.8651 99.47 8.2353	0.8666 99.64 8.2494
119.5 215.10 143.913							0.8567 98.50 8.1551	0.8583 98.69 8.1706	0.8599 98.87 8.1858	0.8615 99.05 8.2007	0.8630 99.23 8.2154	0.8645 99.41 8.2299	0.8660 99.58 8.2441
119.6 215.28 144.756							0.8561 98.43 8.1494	0.8577 98.62 8.1649	0.8593 98.81 8.1802	0.8609 98.99 8.1952	0.8625 99.17 8.2100	0.8640 99.34 8.2245	0.8655 99.51 8.2388
119.7 215.46 145.602							0.8555 98.36 8.1437	0.8571 98.55 8.1593	0.8587 98.74 8.1746	0.8603 98.92 8.1897	0.8619 99.10 8.2045	0.8634 99.28 8.2191	0.8649 99.45 8.2335
119.8 215.64 146.452							0.8549 98.30 8.1380	0.8565 98.48 8.1537	0.8582 98.67 8.1691	0.8597 98.85 8.1842	0.8613 99.03 8.1991	0.8628 99.21 8.2137	0.8644 99.38 8.2281
119.9 215.82 147.305							0.8543 98.23 8.1323	0.8559 98.42 8.1480	0.8576 98.60 8.1635	0.8592 98.79 8.1787	0.8607 98.97 8.1936	0.8623 99.15 8.2083	0.8638 99.32 8.2228

TABLE ENTPIES													
1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA				1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL									
PSIA ATM.	12.000 0.817	14.696 1.000	25.000 1.701	50.000 3.402	75.000 5.103	100.000 6.805	150.000 10.207	200.000 13.609	250.000 17.011	300.000 20.414	350.000 23.816	400.000 27.218	450.000 30.621
120.0 216.00 148.162							0.8537 98.16 8.1265	0.8554 98.35 8.1423	0.8570 98.54 8.1579	0.8586 98.72 8.1731	0.8602 98.90 8.1881	0.8617 99.08 8.2029	0.8632 99.25 8.2174
120.1 216.18 149.022							0.8531 98.09 8.1208	0.8548 98.28 8.1367	0.8564 98.47 8.1523	0.8580 98.65 8.1676	0.8596 98.84 8.1827	0.8611 99.01 8.1975	0.8627 99.19 8.2121
120.2 216.36 149.886							0.8525 98.02 8.1150	0.8542 98.21 8.1310	0.8558 98.40 8.1467	0.8574 98.59 8.1620	0.8590 98.77 8.1772	0.8606 98.95 8.1920	0.8621 99.13 8.2067
120.3 216.54 150.754								0.8536 98.14 8.1253	0.8552 98.33 8.1410	0.8568 98.52 8.1565	0.8584 98.70 8.1717	0.8600 98.88 8.1866	0.8615 99.06 8.2013
120.4 216.72 151.625								0.8530 98.07 8.1196	0.8546 98.26 8.1354	0.8563 98.45 8.1509	0.8579 98.64 8.1662	0.8594 98.82 8.1811	0.8610 99.00 8.1959
120.5 216.90 152.500								0.8524 98.00 8.1139	0.8540 98.20 8.1297	0.8557 98.38 8.1453	0.8573 98.57 8.1606	0.8589 98.75 8.1757	0.8604 98.93 8.1905
120.6 217.08 153.378								0.8518 97.93 8.1081	0.8534 98.13 8.1241	0.8551 98.32 8.1397	0.8567 98.50 8.1551	0.8583 98.68 8.1702	0.8598 98.86 8.1851
120.7 217.26 154.261								0.8512 97.87 8.1024	0.8528 98.06 8.1184	0.8545 98.25 8.1341	0.8561 98.44 8.1496	0.8577 98.62 8.1647	0.8593 98.80 8.1797
120.8 217.44 155.146								0.8505 97.80 8.0966	0.8522 97.99 8.1127	0.8539 98.18 8.1285	0.8555 98.37 8.1440	0.8571 98.55 8.1592	0.8587 98.73 8.1742
120.9 217.62 156.036								0.8499 97.73 8.0909	0.8516 97.92 8.1070	0.8533 98.11 8.1229	0.8549 98.30 8.1384	0.8565 98.49 8.1537	0.8581 98.67 8.1688
121.0 217.80 156.929								0.8493 97.66 8.0851	0.8510 97.85 8.1013	0.8527 98.04 8.1172	0.8544 98.23 8.1329	0.8560 98.42 8.1482	0.8576 98.60 8.1633
121.1 217.98 157.826								0.8487 97.59 8.0793	0.8504 97.78 8.0956	0.8521 97.98 8.1116	0.8538 98.17 8.1273	0.8554 98.35 8.1427	0.8570 98.54 8.1579
121.2 218.16 158.726								0.8481 97.52 8.0735	0.8498 97.71 8.0899	0.8515 97.91 8.1059	0.8532 98.10 8.1217	0.8548 98.29 8.1372	0.8564 98.47 8.1524
121.3 218.34 159.631								0.8475 97.45 8.0677	0.8492 97.64 8.0841	0.8509 97.84 8.1003	0.8526 98.03 8.1161	0.8542 98.22 8.1316	0.8558 98.40 8.1469
121.4 218.52 160.539								0.8469 97.38 8.0618	0.8486 97.58 8.0784	0.8503 97.77 8.0946	0.8520 97.96 8.1105	0.8536 98.15 8.1261	0.8553 98.34 8.1415
121.5 218.70 161.450								0.8463 97.31 8.0560	0.8480 97.51 8.0726	0.8497 97.70 8.0889	0.8514 97.90 8.1049	0.8531 98.08 8.1205	0.8547 98.27 8.1360
121.6 218.88 162.366								0.8457 97.23 8.0502	0.8474 97.44 8.0668	0.8491 97.63 8.0832	0.8508 97.83 8.0992	0.8525 98.02 8.1150	0.8541 98.20 8.1304
121.7 219.06 163.285								0.8451 97.16 8.0443	0.8468 97.37 8.0610	0.8485 97.56 8.0775	0.8502 97.76 8.0936	0.8519 97.95 8.1094	0.8535 98.14 8.1249
121.8 219.24 164.208								0.8444 97.09 8.0384	0.8462 97.30 8.0552	0.8479 97.50 8.0717	0.8496 97.69 8.0879	0.8513 97.88 8.1038	0.8529 98.07 8.1194
121.9 219.42 165.134								0.8438 97.02 8.0325	0.8456 97.23 8.0494	0.8473 97.43 8.0660	0.8490 97.62 8.0822	0.8507 97.82 8.0982	0.8524 98.00 8.1139

TABLE 4 - CONTINUED

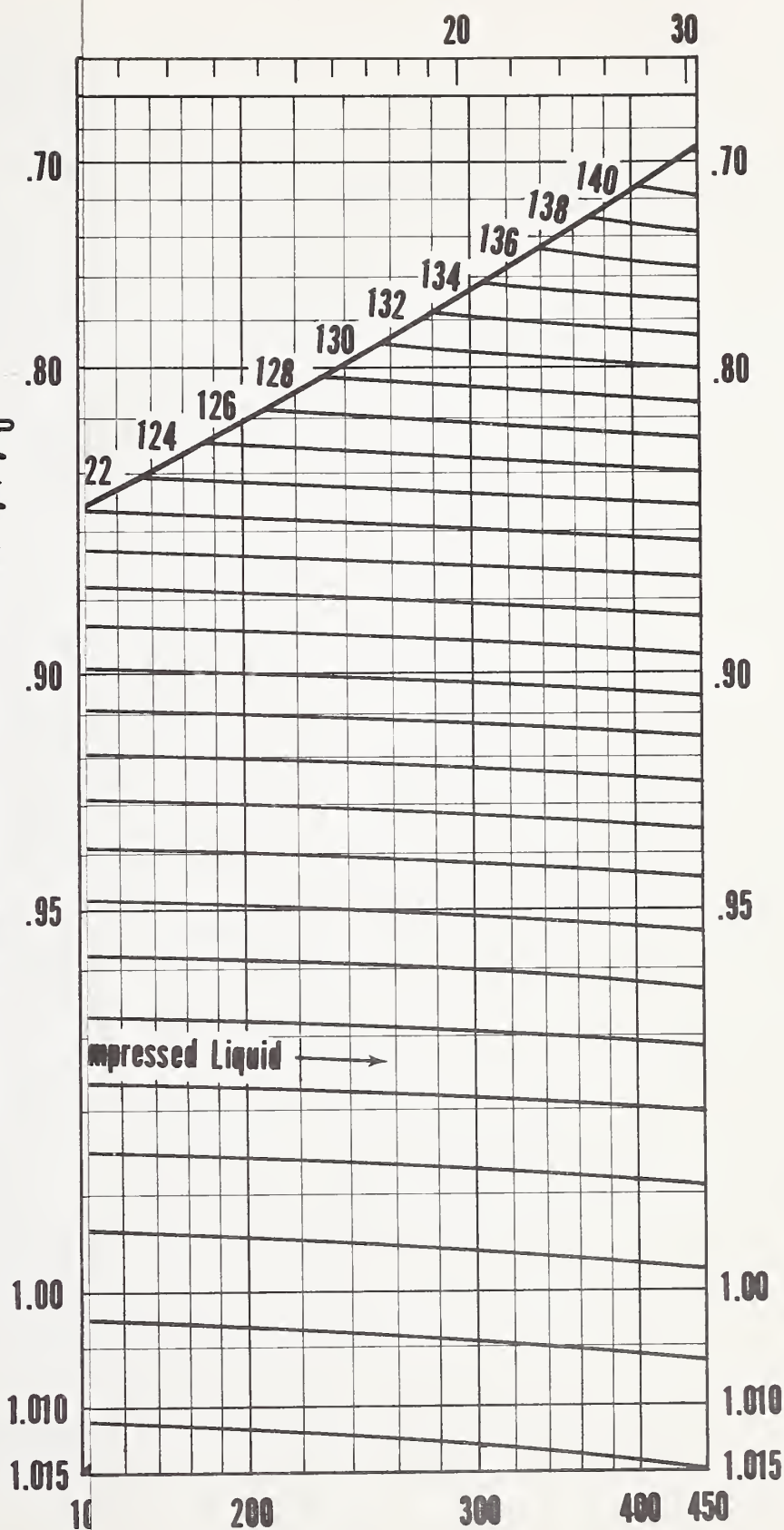
DENSITY OF COMPRESSED LIQUID OXYGEN - CONTINUED

1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA		TABLE ENTRIES											
		1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL											
PSIA	12.000	14.696	25.000	50.000	75.000	100.000	150.000	200.000	250.000	300.000	350.000	400.000	450.000
ATM.	0.817	1.000	1.701	3.402	5.103	6.805	10.207	13.609	17.011	20.414	23.916	27.218	30.621
122.0 219.60 166.065								0.8432 96.95 8.0266	0.8450 97.16 8.0436	0.8457 97.36 8.0602	0.8484 97.55 8.0766	0.8501 97.75 8.0926	0.8518 97.94 8.1083
122.1 219.78 166.999								0.8426 96.48 8.0207	0.8444 97.08 8.0378	0.8461 97.29 8.0545	0.8478 97.48 8.0709	0.8495 97.68 8.0870	0.8512 97.87 8.1028
122.2 219.96 167.937								0.8420 96.81 8.0148	0.8438 97.01 8.0319	0.8455 97.22 8.0487	0.8472 97.42 8.0652	0.8489 97.61 8.0813	0.8506 97.80 8.0972
122.3 220.14 168.878								0.8413 96.74 8.0088	0.8431 96.94 8.0261	0.8449 97.15 8.0429	0.8466 97.35 8.0595	0.8484 97.54 8.0757	0.8500 97.74 8.0916
122.4 220.32 169.824								0.8407 96.66 8.0029	0.8425 96.87 8.0202	0.8443 97.08 8.0371	0.8460 97.28 8.0537	0.8478 97.47 8.0700	0.8494 97.67 8.0860
122.5 220.50 170.773								0.8401 96.59 7.9969	0.8419 96.80 8.0143	0.8437 97.01 8.0313	0.8454 97.21 8.0480	0.8472 97.41 8.0644	0.8488 97.60 8.0805
122.6 220.68 171.726								0.8394 96.52 7.9909	0.8413 96.73 8.0084	0.8431 96.94 8.0255	0.8448 97.14 8.0423	0.8466 97.34 8.0587	0.8483 97.53 8.0748
122.7 220.86 172.683								0.8388 96.45 7.9849	0.8407 96.66 8.0025	0.8425 96.87 8.0197	0.8442 97.07 8.0365	0.8460 97.27 8.0530	0.8477 97.47 8.0692
122.8 221.04 173.644								0.8382 96.37 7.9789	0.8400 96.59 7.9966	0.8419 96.80 8.0138	0.8436 97.00 8.0307	0.8454 97.20 8.0473	0.8471 97.40 8.0636
122.9 221.22 174.609								0.8376 96.30 7.9729	0.8394 96.52 7.9906	0.8412 96.73 8.0080	0.8430 96.93 8.0250	0.8448 97.13 8.0416	0.8465 97.33 8.0580
123.0 221.40 175.577								0.8369 96.23 7.9669	0.8388 96.44 7.9847	0.8406 96.65 8.0021	0.8424 96.86 8.0192	0.8442 97.06 8.0359	0.8459 97.26 8.0523
123.1 221.58 176.550								0.8363 96.16 7.9608	0.8382 96.37 7.9787	0.8400 96.58 7.9962	0.8418 96.79 8.0134	0.8436 96.99 8.0302	0.8453 97.19 8.0467
123.2 221.76 177.526								0.8356 96.08 7.9548	0.8375 96.30 7.9727	0.8394 96.51 7.9903	0.8412 96.72 8.0075	0.8430 96.92 8.0244	0.8447 97.12 8.0410
123.3 221.94 178.506								0.8350 96.01 7.9487	0.8369 96.23 7.9667	0.8388 96.44 7.9844	0.8406 96.65 8.0017	0.8424 96.85 8.0187	0.8441 97.06 8.0353
123.4 222.12 179.490								0.8344 95.94 7.9426	0.8363 96.15 7.9607	0.8381 96.37 7.9785	0.8400 96.58 7.9959	0.8418 96.78 8.0129	0.8435 96.99 8.0296
123.5 222.30 180.478								0.8337 95.86 7.9365	0.8356 96.08 7.9547	0.8375 96.30 7.9726	0.8394 96.51 7.9900	0.8411 96.72 8.0071	0.8429 96.92 8.0239
123.6 222.48 181.470								0.8331 95.79 7.9304	0.8350 96.01 7.9487	0.8369 96.23 7.9666	0.8387 96.44 7.9842	0.8405 96.65 8.0014	0.8423 96.85 8.0182
123.7 222.66 182.466								0.8324 95.71 7.9242	0.8344 95.94 7.9427	0.8363 96.15 7.9607	0.8381 96.37 7.9783	0.8399 96.58 7.9956	0.8417 96.78 8.0125
123.8 222.84 183.465								0.8318 95.64 7.9181	0.8337 95.86 7.9366	0.8356 96.08 7.9547	0.8375 96.30 7.9724	0.8393 96.50 7.9897	0.8411 96.71 8.0067
123.9 223.02 184.469								0.8311 95.57 7.9119	0.8331 95.79 7.9305	0.8350 96.01 7.9487	0.8369 96.22 7.9665	0.8387 96.43 7.9839	0.8405 96.64 8.0010

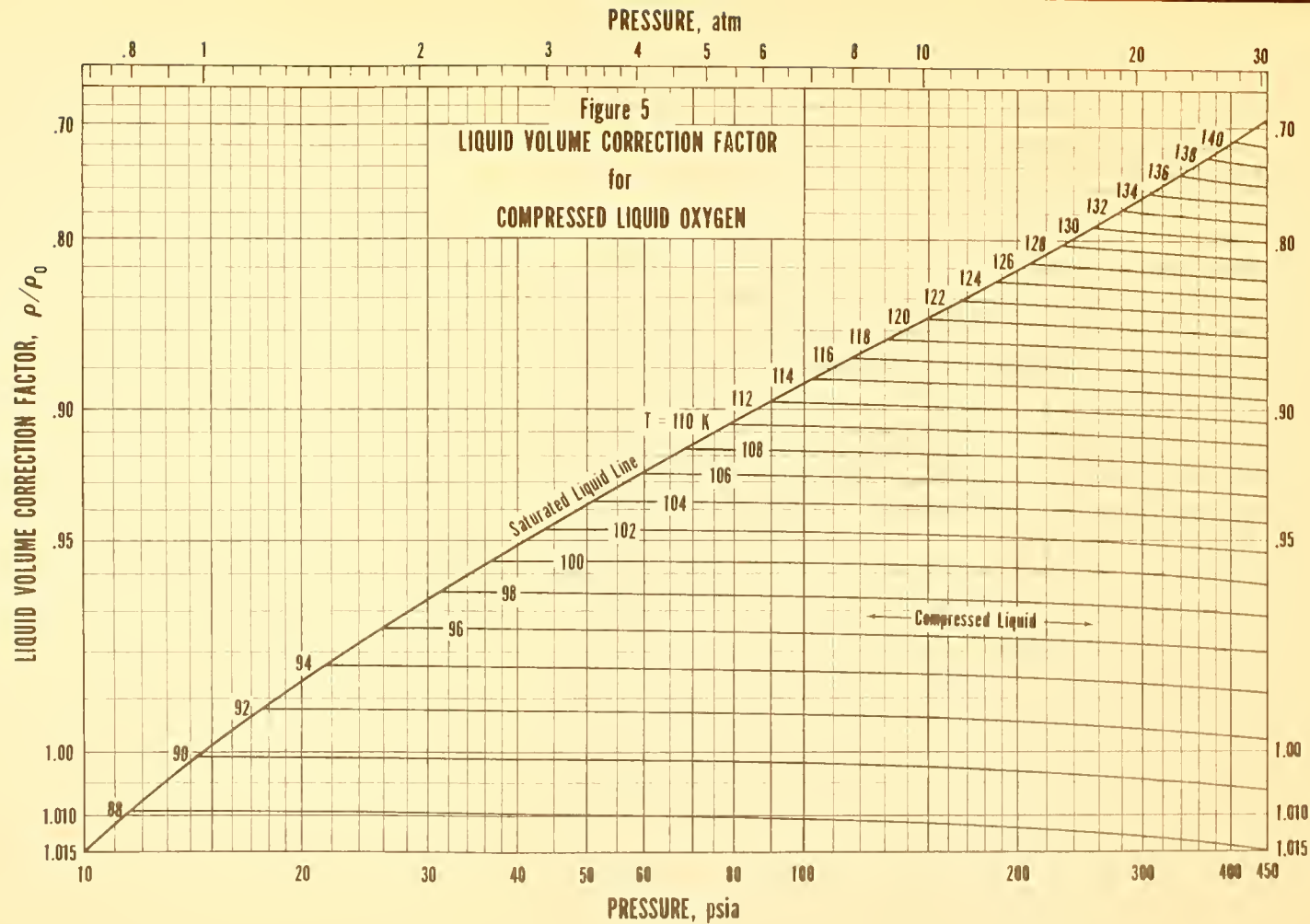
				TABLE ENTRIES									
1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA				1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL									
PSIA ATM.	12.000 0.817	14.696 1.000	25.000 1.701	50.000 3.402	75.000 5.103	100.000 6.805	150.000 10.207	200.000 13.609	250.000 17.011	300.000 20.414	350.000 23.816	400.000 27.218	450.000 30.621
124.0 223.20 185.476								0.8305 95.49 7.9058	0.8325 95.72 7.9244	0.8344 95.94 7.9427	0.8363 96.15 7.9606	0.8381 96.36 7.9781	0.8399 96.57 7.9952
125.0 225.00 195.771								0.8239 94.73 7.8431	0.8260 94.97 7.8628	0.8280 95.20 7.8820	0.8300 95.43 7.9007	0.8319 95.65 7.9191	0.8338 95.87 7.9370
126.0 226.80 206.470									0.8193 94.21 7.7996	0.8215 94.45 7.8198	0.8235 94.69 7.8395	0.8256 94.92 7.8587	0.8275 95.15 7.8776
127.0 228.60 217.583									0.8125 93.42 7.7347	0.8148 93.68 7.7560	0.8169 93.93 7.7768	0.8191 94.18 7.7970	0.8212 94.42 7.8168
128.0 230.40 229.118									0.8055 92.62 7.6679	0.8079 92.89 7.6905	0.8102 93.16 7.7124	0.8124 93.41 7.7338	0.8146 93.66 7.7546
129.0 232.20 241.087									0.7984 91.80 7.6004	0.8009 92.08 7.6236	0.8032 92.36 7.6463	0.8055 92.62 7.6679	0.8078 92.88 7.6896
130.0 234.00 253.498										0.7935 91.24 7.5534	0.7960 91.53 7.5777	0.7985 91.81 7.6012	0.8009 92.09 7.6241
131.0 235.80 266.360										0.7861 90.38 7.4830	0.7888 90.69 7.5086	0.7913 90.99 7.5328	0.7939 91.28 7.5570
132.0 237.60 279.684										0.7782 89.48 7.4081	0.7811 89.81 7.4355	0.7839 90.13 7.4621	0.7866 90.44 7.4878
133.0 239.40 293.480										0.7703 88.56 7.3323	0.7734 88.92 7.3619	0.7763 89.26 7.3898	0.7792 89.59 7.4172
134.0 241.20 307.758											0.7651 87.98 7.2837	0.7684 88.35 7.3144	0.7715 88.70 7.3438
135.0 243.00 322.529											0.7567 87.00 7.2030	0.7601 87.40 7.2360	0.7634 87.78 7.2673
136.0 244.80 337.802											0.7478 85.98 7.1181	0.7515 86.41 7.1540	0.7551 86.82 7.1881
137.0 246.60 353.590												0.7425 85.37 7.0682	0.7464 85.82 7.1054
138.0 248.40 369.904												0.7331 84.29 6.9782	0.7373 84.78 7.0188
139.0 250.20 386.756												0.7229 83.12 6.8819	0.7277 83.67 6.9272
140.0 252.00 404.159													0.7176 82.51 6.8311
141.0 253.80 422.125													0.7066 81.25 6.7265
142.0 255.60 440.669													0.6950 79.92 6.6163



LIQUID VOLUME CORRECTION FACTOR, ρ/ρ_0







7. NITROGEN

The data tabulated for nitrogen are based on the paper by Strobridge (1962). The saturated liquid values were calculated by solving simultaneously the vapor pressure equation and the equation of state. First the vapor pressure equation was solved for either pressure or temperature depending on the integral value desired, then using the resulting P and T, the equation of state was solved for the corresponding density. All of the tabulated values were obtained in this manner except the critical point. At the critical point the vapor pressure equation was used to calculate the pressure from an input temperature of 126.26 K but the density was calculated using the theory of rectilinear diameters and the saturation densities tabulated by Strobridge.

Values near room temperature are given in table 5, uncertainties for the data in table 6, values for the saturated liquid are given in table 7, and values for the compressed liquid are shown in table 8. Near the critical point, the deviations between calculated and

Table 5

Density of Nitrogen at 1 Atmosphere Near Room Temperature

Temperature	Density		
	gram-mole/cm ³	lb/ft ³	lb/gal
0 C	0.000044635	0.078066	0.010436
68 F	0.000041582	0.072725	0.009722
70 F	0.000041424	0.072450	0.009685
Temperature	Volume		
	cm ³ /gram-mole	ft ³ /lb	gal/lb
0 C	22404	12.810	95.823
68 F	24049	13.750	102.860
70 F	24141	13.803	103.251
Temperature	Density Ratios and Equivalent volumes		
	$\frac{\text{density at NBP}^*}{\text{density at the temperature indicated}}$		
	dimensionless	$\frac{\text{lb/gal}}{\text{lb/ft}^3} = \text{ft}^3/\text{gal}$	
0 C	645.67	86.31	
68 F	693.08	92.65	
70 F	695.71	93.00 _g	

* 50.405 lb/ft³ or 6.7381 lb/gal

experimental data range from 0.2% at 125 K to 5% at 126 K. The critical density given in table 7 is uncertain by 5% as well. The value of the density at the NBP in table 7 should be the same as in the CGA pamphlet P-6, yet they differ by 0.1%. This is surprising as the source has not changed, and we can only suspect an error in the printing of the pamphlet.

Table 6
Uncertainties in the Data for Nitrogen

variable	uncertainty	range of temperature
temperature	0.5%	64 to 72 K
	0.1%	72 to 125 K
	0.015 K	room temperature
volume	0.4%	up to 125 K
	increases to 5%	at 126 K
	0.01%	room temperature
pressure	1%	64 to 72 K
	0.1%	72 to 126 K
	0.01%	room temperature

The specific volume for the saturated liquid is plotted in figure 6. The liquid volume correction factor for the saturated liquid is shown in figure 7 and the liquid volume correction factor for the compressed liquid is plotted in figure 8.

TABLE 7

SATURATED LIQUID NITROGEN

ATM	PRESSURE		TEMPERATURE		DENSITY		LB/GAL	VOLUME		GAL/LB	LIQ VOLUME CORRECTION FACTOR*		DENSITY RATIO
	PSIA	KELVIN	RANKINE	GRAM-MOLE/ CM ³	LB/FT ³	GRAM-MOLE CM ³ /		FT ³ /LB	CORRECTION FACTOR		NTP (70°F) VOLUME CORRECTION FACTOR		
0.123	1.813	63.150	113.67	0.030998	54.215	7.2475	32.260	0.018445	0.13798	1.0756	100.04		
0.128	1.876	63.333	114.00	0.030972	54.169	7.2414	32.287	0.018461	0.13810	1.0747	99.95		
0.136	2.000	63.687	114.64	0.030922	54.081	7.2296	32.340	0.018491	0.13832	1.0729	99.79		
0.141	2.074	63.889	115.00	0.030893	54.031	7.2229	32.370	0.018508	0.13845	1.0719	99.70		
0.144	2.116	64.000	115.20	0.030877	54.003	7.2192	32.387	0.018517	0.13852	1.0714	99.65		
0.156	2.290	64.444	116.00	0.030813	53.892	7.2043	32.454	0.018556	0.13881	1.0692	99.44		
0.172	2.522	65.000	117.00	0.030733	53.751	7.1855	32.538	0.018604	0.13917	1.0664	99.18		
0.189	2.774	65.556	118.00	0.030652	53.610	7.1666	32.624	0.018653	0.13954	1.0636	98.92		
0.203	2.989	66.000	118.80	0.030587	53.496	7.1514	32.694	0.018693	0.13983	1.0613	98.71		
0.207	3.045	66.111	119.00	0.030571	53.468	7.1476	32.711	0.018703	0.13991	1.0608	98.66		
0.227	3.337	66.667	120.00	0.030489	53.324	7.1284	32.799	0.018753	0.14028	1.0579	98.39		
0.240	3.523	67.000	120.60	0.030439	53.238	7.1169	32.852	0.018784	0.14051	1.0562	98.23		
0.248	3.651	67.222	121.00	0.030406	53.180	7.1092	32.888	0.018804	0.14066	1.0551	98.13		
0.271	3.988	67.778	122.00	0.030323	53.035	7.0898	32.978	0.018855	0.14105	1.0522	97.86		
0.272	4.000	67.797	122.03	0.030321	53.030	7.0891	32.981	0.018857	0.14106	1.0521	97.85		
0.281	4.129	68.000	122.40	0.030290	52.977	7.0820	33.014	0.018876	0.14120	1.0510	97.75		
0.296	4.349	68.333	123.00	0.030240	52.889	7.0703	33.069	0.018907	0.14144	1.0493	97.59		
0.322	4.735	68.889	124.00	0.030156	52.743	7.0507	33.161	0.018960	0.14183	1.0464	97.32		
0.328	4.816	69.000	124.20	0.030139	52.713	7.0467	33.179	0.018971	0.14191	1.0458	97.27		
0.350	5.148	69.444	125.00	0.030072	52.595	7.0309	33.254	0.019013	0.14223	1.0435	97.05		
0.380	5.589	70.000	126.00	0.029987	52.447	7.0111	33.346	0.019067	0.14263	1.0405	96.77		
0.408	6.000	70.489	126.88	0.029912	52.315	6.9936	33.431	0.019115	0.14299	1.0379	96.53		
0.412	6.058	70.556	127.00	0.029902	52.297	6.9911	33.443	0.019121	0.14304	1.0376	96.50		
0.439	6.456	71.000	127.80	0.029833	52.177	6.9751	33.520	0.019165	0.14337	1.0352	96.28		
0.446	6.558	71.111	128.00	0.029816	52.147	6.9711	33.539	0.019176	0.14345	1.0346	96.22		
0.482	7.090	71.667	129.00	0.029730	51.997	6.9509	33.636	0.019232	0.14387	1.0316	95.94		
0.505	7.425	72.000	129.60	0.029678	51.906	6.9388	33.695	0.019266	0.14412	1.0298	95.78		
0.521	7.654	72.222	130.00	0.029643	51.845	6.9307	33.735	0.019288	0.14429	1.0286	95.66		
0.544	8.000	72.547	130.58	0.029592	51.756	6.9188	33.793	0.019321	0.14453	1.0268	95.50		
0.562	8.253	72.778	131.00	0.029556	51.693	6.9103	33.834	0.019345	0.14471	1.0256	95.38		
0.579	8.503	73.000	131.40	0.029521	51.631	6.9021	33.874	0.019368	0.14488	1.0243	95.27		
0.605	8.888	73.333	132.00	0.029468	51.539	6.8898	33.935	0.019403	0.14514	1.0225	95.10		
0.651	9.560	73.889	133.00	0.029380	51.385	6.8692	34.037	0.019461	0.14558	1.0195	94.82		
0.660	9.699	74.000	133.20	0.029363	51.354	6.8651	34.057	0.019472	0.14566	1.0188	94.76		
0.680	10.000	74.237	133.63	0.029325	51.289	6.8563	34.101	0.019497	0.14585	1.0175	94.64		
0.699	10.270	74.444	134.00	0.029292	51.231	6.8485	34.139	0.019520	0.14602	1.0164	94.53		
0.750	11.021	75.000	135.00	0.029203	51.075	6.8277	34.243	0.019579	0.14646	1.0133	94.24		
0.804	11.813	75.556	136.00	0.029113	50.919	6.8069	34.348	0.019639	0.14691	1.0102	93.95		
0.817	12.000	75.683	136.23	0.029093	50.883	6.8020	34.373	0.019653	0.14701	1.0095	93.89		
0.849	12.477	76.000	136.80	0.029042	50.793	6.7901	34.433	0.019688	0.14727	1.0077	93.72		
0.861	12.648	76.111	137.00	0.029024	50.762	6.7859	34.455	0.019700	0.14737	1.0071	93.67		
0.920	13.527	76.667	138.00	0.028933	50.604	6.7647	34.562	0.019761	0.14783	1.0040	93.37		
0.953	14.000	76.955	138.52	0.028886	50.522	6.7538	34.618	0.019793	0.14807	1.0023	93.22		
0.958	14.076	77.000	138.60	0.028879	50.509	6.7520	34.627	0.019799	0.14810	1.0021	93.20		

* Equivalent cubic feet (NTP) per gallon of liquid

TABLE 7 CONTINUED

SATURATED LIQUID NITROGEN

ATM	PRESSURE PSIA	TEMPERATURE		DENSITY LB/FT ³	LB/GAL	CM ³ / GRAM-MOLE	VOLUME FT ³ /LB	GAL/LB	LIQ VOLUME CORRECTION FACTOR	DENSITY RATIO NTP (70°F) VOLUME CORRECTION FACTOR*
		KELVIN	RANKINE							
0.983	14.452	77.222	139.00	0.028843	6.7435	34.671	0.019824	0.14829	1.0008	93.08
1.000	14.696	77.364	139.26	0.028819	6.7381	34.699	0.019839	0.14841	1.0000	93.01
1.050	15.425	77.778	140.00	0.028751	6.7222	34.781	0.019886	0.14876	0.9976	92.79
1.077	15.828	78.000	140.40	0.028715	6.7137	34.825	0.019912	0.14895	0.9964	92.67
1.089	16.000	78.094	140.57	0.028699	6.7100	34.844	0.019922	0.14903	0.9958	92.62
1.119	16.447	78.333	141.00	0.028660	6.7008	34.892	0.019950	0.14924	0.9945	92.49
1.192	17.520	78.889	142.00	0.028568	6.6793	35.005	0.020014	0.14981	0.9913	92.19
1.207	17.740	79.000	142.20	0.028549	6.6749	35.027	0.020027	0.14982	0.9906	92.13
1.225	18.000	79.129	142.43	0.028528	6.6699	35.054	0.020042	0.14993	0.9899	92.06
1.269	18.544	79.444	143.00	0.028475	6.6576	35.118	0.020079	0.15020	0.9881	91.90
1.349	19.823	80.000	144.00	0.028382	6.6359	35.234	0.020145	0.15070	0.9848	91.59
1.361	20.000	80.081	144.15	0.028368	6.6327	35.250	0.020155	0.15077	0.9844	91.55
1.433	21.057	80.556	145.00	0.028289	6.6140	35.350	0.020212	0.15119	0.9816	91.29
1.497	22.000	80.963	145.73	0.028220	6.5979	35.436	0.020261	0.15156	0.9792	91.07
1.503	22.086	81.000	145.80	0.028213	6.5964	35.444	0.020266	0.15160	0.9790	91.05
1.521	22.349	81.111	146.00	0.028195	6.5920	35.468	0.020279	0.15170	0.9783	90.99
1.613	23.699	81.667	147.00	0.028100	6.5699	35.587	0.020347	0.15221	0.9750	90.68
1.633	24.000	81.787	147.22	0.028079	6.5651	35.613	0.020362	0.15232	0.9743	90.62
1.670	24.538	82.000	147.60	0.028043	6.5566	35.659	0.020389	0.15252	0.9731	90.50
1.709	25.110	82.222	148.00	0.028005	6.5477	35.708	0.020416	0.15273	0.9717	90.38
1.769	26.000	82.561	148.61	0.027947	6.5341	35.782	0.020459	0.15304	0.9697	90.19
1.809	26.583	82.778	149.00	0.027909	6.5254	35.830	0.020486	0.15325	0.9684	90.07
1.850	27.190	83.000	149.40	0.027871	6.5164	35.879	0.020514	0.15346	0.9671	89.95
1.905	28.000	83.291	149.92	0.027821	6.5046	35.944	0.020552	0.15374	0.9654	89.78
1.913	28.120	83.333	150.00	0.027813	6.5029	35.954	0.020557	0.15378	0.9651	89.76
2.000	29.392	83.777	150.80	0.027736	6.4849	36.054	0.020614	0.15420	0.9624	89.51
2.022	29.722	83.889	151.00	0.027717	6.4803	36.079	0.020629	0.15431	0.9617	89.45
2.041	30.000	83.983	151.17	0.027700	6.4765	36.101	0.020641	0.15440	0.9612	89.40
2.045	30.050	84.000	151.20	0.027697	6.4758	36.104	0.020643	0.15442	0.9611	89.39
2.136	31.392	84.444	152.00	0.027620	6.4576	36.206	0.020701	0.15486	0.9584	89.13
2.177	32.000	84.641	152.35	0.027585	6.4495	36.251	0.020727	0.15505	0.9572	89.02
2.254	33.130	85.000	153.00	0.027522	6.4348	36.334	0.020775	0.15541	0.9550	88.82
2.314	34.000	85.270	153.49	0.027474	6.4237	36.397	0.020811	0.15567	0.9533	88.67
2.378	34.940	85.556	154.00	0.027424	6.4118	36.465	0.020849	0.15596	0.9516	88.50
2.450	36.000	85.871	154.57	0.027368	6.3987	36.539	0.020892	0.15628	0.9496	88.32
2.480	36.440	86.000	154.80	0.027345	6.3934	36.570	0.020909	0.15641	0.9488	88.25
2.506	36.822	86.111	155.00	0.027325	6.3887	36.596	0.020924	0.15653	0.9481	88.18
2.586	38.000	86.448	155.61	0.027265	6.3746	36.677	0.020971	0.15687	0.9461	87.99
2.639	38.778	86.667	156.00	0.027226	6.3655	36.730	0.021001	0.15710	0.9447	87.86
2.721	39.989	87.000	156.60	0.027166	6.3515	36.811	0.021047	0.15744	0.9426	87.67
2.722	40.000	87.003	156.61	0.027165	6.3513	36.812	0.021048	0.15745	0.9426	87.67
2.777	40.811	87.222	157.00	0.027126	6.3421	36.866	0.021078	0.15768	0.9412	87.54
2.858	42.000	87.538	157.57	0.027069	6.3288	36.943	0.021123	0.15801	0.9392	87.36

TABLE 7 CONTINUED

SATURATED LIQUID NITROGEN

PRESSURE			TEMPERATURE		DENSITY		VOLUME		GAL/LB	LIQ VOLUME CORRECTION FACTOR	DENSITY RATIO NTP (70°F) CORRECTION FACTOR*
ATM	PSIA	KELVIN	RANKINE	GRAM-MOLE/ CM ³	LB/FT ³	LB/GAL	CM ³ / GRAM-MOLE	FT ³ /LB			
2.921	42.921	87.778	158.00	0.027025	47.266	6.3186	37.003	0.021157	0.15826	0.9377	87.22
2.980	43.788	88.000	158.40	0.026985	47.196	6.3091	37.058	0.021188	0.15850	0.9363	87.08
2.994	44.000	88.054	158.50	0.026975	47.178	6.3068	37.072	0.021196	0.15856	0.9360	87.05
3.000	44.088	88.076	158.54	0.026971	47.171	6.3059	37.077	0.021199	0.15858	0.9359	87.04
3.070	45.112	88.333	159.00	0.026924	47.089	6.2949	37.142	0.021236	0.15886	0.9342	86.89
3.130	46.000	88.553	159.40	0.026884	47.019	6.2855	37.197	0.021268	0.15910	0.9328	86.76
3.224	47.383	88.889	160.00	0.026822	46.911	6.2711	37.283	0.021317	0.15946	0.9307	86.56
3.256	47.848	89.000	160.20	0.026801	46.875	6.2663	37.311	0.021333	0.15958	0.9300	86.49
3.266	48.000	89.036	160.27	0.026795	46.863	6.2647	37.321	0.021339	0.15962	0.9297	86.47
3.384	49.738	89.444	161.00	0.026719	46.732	6.2471	37.426	0.021399	0.16007	0.9271	86.23
3.402	50.000	89.505	161.11	0.026708	46.712	6.2445	37.442	0.021408	0.16014	0.9267	86.19
3.538	52.000	89.960	161.93	0.026624	46.564	6.2247	37.561	0.021476	0.16065	0.9238	85.92
3.551	52.179	90.000	162.00	0.026616	46.551	6.2230	37.571	0.021482	0.16070	0.9235	85.90
3.674	54.000	90.402	162.72	0.026541	46.420	6.2054	37.678	0.021543	0.16115	0.9209	85.65
3.723	54.706	90.556	163.00	0.026512	46.369	6.1987	37.719	0.021566	0.16133	0.9199	85.56
3.811	56.000	90.833	163.50	0.026460	46.278	6.1865	37.793	0.021608	0.16164	0.9181	85.39
3.864	56.792	91.000	163.80	0.026428	46.223	6.1791	37.838	0.021634	0.16184	0.9170	85.29
3.901	57.322	91.111	164.00	0.026407	46.186	6.1742	37.868	0.021651	0.16196	0.9163	85.22
3.947	58.000	91.252	164.25	0.026381	46.140	6.1680	37.906	0.021673	0.16213	0.9154	85.14
4.000	58.784	91.413	164.54	0.026350	46.086	6.1608	37.950	0.021699	0.16232	0.9143	85.04
4.083	60.000	91.661	164.99	0.026303	46.004	6.1498	38.018	0.021737	0.16261	0.9127	84.89
4.085	60.029	91.667	165.00	0.026302	46.002	6.1496	38.020	0.021738	0.16261	0.9127	84.88
4.198	61.698	92.000	165.60	0.026238	45.891	6.1347	38.112	0.021791	0.16301	0.9104	84.68
4.219	62.000	92.060	165.71	0.026227	45.871	6.1320	38.129	0.021800	0.16308	0.9101	84.64
4.275	62.829	92.222	166.00	0.026196	45.816	6.1247	38.174	0.021826	0.16327	0.9090	84.54
4.355	64.000	92.449	166.41	0.026152	45.740	6.1145	38.238	0.021863	0.16354	0.9075	84.40
4.472	65.723	92.778	167.00	0.026099	45.629	6.0997	38.330	0.021916	0.16394	0.9053	84.19
4.491	66.000	92.830	167.09	0.026079	45.612	6.0974	38.345	0.021924	0.16400	0.9049	84.16
4.553	66.908	93.000	167.40	0.026046	45.554	6.0897	38.394	0.021952	0.16421	0.9038	84.06
4.627	68.000	93.202	167.76	0.026007	45.485	6.0805	38.452	0.021985	0.16446	0.9024	83.93
4.676	68.713	93.333	168.00	0.025981	45.441	6.0745	38.489	0.022007	0.16462	0.9015	83.85
4.763	70.000	93.567	168.42	0.025936	45.361	6.0639	38.557	0.022045	0.16491	0.8999	83.70
4.886	71.802	93.889	169.00	0.025873	45.251	6.0492	38.651	0.022099	0.16531	0.8978	83.50
4.899	72.000	93.924	169.06	0.025866	45.239	6.0476	38.661	0.022105	0.16536	0.8975	83.47
4.929	72.432	94.000	169.20	0.025851	45.213	6.0441	38.683	0.022118	0.16545	0.8970	83.43
5.000	73.480	94.183	169.53	0.025815	45.150	6.0356	38.737	0.022149	0.16568	0.8957	83.31
5.035	74.000	94.274	169.69	0.025797	45.119	6.0315	38.764	0.022164	0.16580	0.8951	83.25
5.103	74.991	94.444	170.00	0.025763	45.060	6.0236	38.815	0.022193	0.16601	0.8940	83.14
5.171	76.000	94.617	170.31	0.025729	45.000	6.0156	38.866	0.022222	0.16623	0.8928	83.03
5.308	78.000	94.953	170.92	0.025662	44.883	6.0000	38.968	0.022280	0.16667	0.8905	82.82
5.327	78.282	95.000	171.00	0.025653	44.867	5.9978	38.982	0.022288	0.16673	0.8901	82.79
5.444	80.000	95.283	171.51	0.025596	44.768	5.9846	39.068	0.022338	0.16710	0.8882	82.60
5.558	81.677	95.556	172.00	0.025542	44.672	5.9718	39.152	0.022385	0.16745	0.8863	82.43
5.580	82.000	95.608	172.09	0.025531	44.654	5.9694	39.168	0.022394	0.16752	0.8859	82.39
5.716	84.000	95.926	172.67	0.025467	44.542	5.9543	39.266	0.022451	0.16794	0.8837	82.19

TABLE 7 CONTINUED

SATURATED LIQUID NITROGEN

ATM	PRESSURE	TEMPERATURE		DENSITY	VOLUME			GAL/LB	DENSITY RATIO	
		KELVIN	RANKINE		GRAM-MOLE/ CM ³	LB/FT ³	CM ³ / GRAM-MOLE		LIQ VOLUME CORRECTION FACTOR	NTP (70°F) CORRECTION FACTOR*
5.748	84.469	96.000	172.80	0.025452	44.515	5.9508	39.289	0.022464	0.8832	82.14
5.796	85.177	96.111	173.00	0.025430	44.476	5.9456	39.324	0.022484	0.8824	82.07
5.852	86.000	96.239	173.23	0.025404	44.431	5.9395	39.364	0.022507	0.8815	81.98
5.988	88.000	96.547	173.78	0.025341	44.321	5.9248	39.462	0.022563	0.16836	81.78
6.000	88.176	96.575	173.83	0.025335	44.311	5.9235	39.471	0.022568	0.16878	81.76
6.042	88.786	96.667	174.00	0.025317	44.278	5.9191	39.500	0.022584	0.16882	81.70
6.124	90.000	96.850	174.33	0.025279	44.213	5.9104	39.558	0.022618	0.16894	81.70
6.192	91.004	97.000	174.60	0.025248	44.159	5.9042	39.607	0.022646	0.16919	81.58
6.260	92.000	97.148	174.87	0.025218	44.105	5.8960	39.655	0.022673	0.16940	81.48
6.295	92.504	97.222	175.00	0.025202	44.079	5.8925	39.679	0.022687	0.16961	81.38
6.396	94.000	97.441	175.39	0.025157	43.895	5.8679	39.845	0.022782	0.16971	81.33
6.532	96.000	97.730	175.91	0.025097	43.877	5.8655	39.861	0.022791	0.17042	80.99
6.555	96.334	97.778	176.00	0.025087	43.796	5.8547	39.935	0.022833	0.17049	80.96
6.662	97.898	98.000	176.40	0.025041	43.791	5.8540	39.939	0.022836	0.17080	80.81
6.668	98.000	98.014	176.43	0.025038	43.791	5.8540	39.939	0.022836	0.17082	80.80
6.805	100.000	98.295	176.93	0.024979	43.688	5.8403	40.033	0.022869	0.17122	80.61
6.823	100.277	98.333	177.00	0.024971	43.674	5.8384	40.046	0.022897	0.17128	80.59
6.941	102.000	98.571	177.43	0.024921	43.587	5.8267	40.127	0.022943	0.17162	80.43
7.000	102.872	98.691	177.64	0.024896	43.542	5.8208	40.167	0.022966	0.17180	80.34
7.077	104.000	98.843	177.92	0.024863	43.486	5.8132	40.220	0.022996	0.17202	80.24
7.100	104.336	98.889	178.00	0.024854	43.469	5.8110	40.235	0.023005	0.17209	80.21
7.156	105.162	99.000	178.20	0.024830	43.428	5.8054	40.273	0.023027	0.17225	80.13
7.213	106.000	99.112	178.40	0.024806	43.386	5.7999	40.312	0.023049	0.17242	80.06
7.349	108.000	99.377	178.88	0.024750	43.287	5.7866	40.404	0.023102	0.17281	79.87
7.384	108.512	99.444	179.00	0.024735	43.262	5.7833	40.428	0.023115	0.17291	79.83
7.485	110.000	99.639	179.35	0.024694	43.189	5.7735	40.496	0.023154	0.17320	79.69
7.621	112.000	99.897	179.81	0.024638	43.092	5.7605	40.587	0.023206	0.17360	79.51
7.676	112.898	100.000	180.00	0.024616	43.053	5.7553	40.624	0.023227	0.17375	79.44
7.757	114.000	100.151	180.27	0.024583	42.995	5.7476	40.679	0.023258	0.17375	79.33
7.893	116.000	100.403	180.73	0.024528	42.899	5.7348	40.769	0.023310	0.17399	79.16
7.977	117.225	100.556	181.00	0.024495	42.841	5.7270	40.825	0.023342	0.17437	79.05
8.000	117.568	100.598	181.08	0.024486	42.825	5.7248	40.840	0.023351	0.17461	79.02
8.029	118.000	100.651	181.17	0.024474	42.804	5.7221	40.860	0.023362	0.17468	78.98
8.165	120.000	100.897	181.61	0.024420	42.710	5.7095	40.950	0.023414	0.17515	78.81
8.223	120.847	101.000	181.80	0.024397	42.671	5.7042	40.988	0.023435	0.17531	78.74
8.286	121.765	101.111	182.00	0.024373	42.628	5.6985	41.029	0.023459	0.17549	78.66
8.302	122.000	101.139	182.05	0.024367	42.617	5.6970	41.040	0.023465	0.17553	78.64
8.438	124.000	101.379	182.48	0.024313	42.524	5.6846	41.130	0.023516	0.17591	78.46
8.574	126.000	101.616	182.91	0.024261	42.431	5.6723	41.219	0.023567	0.17630	78.29
8.603	126.430	101.667	183.00	0.024249	42.412	5.6696	41.238	0.023578	0.17638	78.26
8.710	128.000	101.850	183.33	0.024208	42.340	5.6600	41.308	0.023618	0.17668	78.13
8.798	129.291	102.000	183.60	0.024175	42.281	5.6522	41.366	0.023651	0.17692	78.02
8.846	130.000	102.082	183.75	0.024156	42.249	5.6478	41.397	0.023669	0.17706	77.96
8.929	131.223	102.222	184.00	0.024125	42.193	5.6404	41.452	0.023700	0.17729	77.85
8.982	132.000	102.311	184.16	0.024104	42.158	5.6357	41.486	0.023720	0.17744	77.79

TABLE 7 CONTINUED

SATURATED LIQUID NITROGEN

ATM	PSIA	TEMPERATURE		GRAM-MOLE/ CM ³	DENSITY LB/FT ³	LB/GAL	CM ³ / GRAM-MOLE	VOLUME FT ³ /LB	GAL/LR	LIQ VOLUME CORRECTION FACTOR	DENSITY RATIO	
		KELVIN	RANKINE								NTP (70°F)	VOLUME CORRECTION FACTOR*
9.000	132.264	102.341	184.21	0.024098	42.146	5.6341	41.498	0.023727	0.17749	0.8362	77.77	
9.118	134.000	102.537	184.57	0.024053	42.068	5.6237	41.575	0.023771	0.17782	0.8346	77.62	
9.254	136.000	102.762	184.97	0.024002	41.979	5.6118	41.663	0.023821	0.17820	0.8328	77.46	
9.264	136.145	102.778	185.00	0.023998	41.973	5.6109	41.670	0.023825	0.17822	0.8327	77.45	
9.390	138.000	102.983	185.37	0.023951	41.890	5.5999	41.752	0.023872	0.17857	0.8311	77.30	
9.401	138.150	103.000	185.40	0.023947	41.884	5.5930	41.758	0.023876	0.17860	0.8309	77.28	
9.526	140.000	103.203	185.77	0.023901	41.802	5.5881	41.840	0.023922	0.17895	0.8293	77.13	
9.608	141.198	103.333	186.00	0.023871	41.749	5.5811	41.893	0.023953	0.17918	0.8283	77.04	
9.662	142.000	103.420	186.16	0.023850	41.714	5.5764	41.928	0.023973	0.17933	0.8276	76.97	
9.799	144.000	103.635	186.54	0.023800	41.627	5.5637	42.016	0.024023	0.17971	0.8259	76.81	
9.935	146.000	103.848	186.93	0.023751	41.540	5.5530	42.104	0.024073	0.18008	0.8241	76.65	
9.961	146.384	103.889	187.00	0.023741	41.523	5.5508	42.121	0.024083	0.18015	0.8238	76.62	
10.000	146.960	103.950	187.11	0.023727	41.498	5.5475	42.146	0.024097	0.18026	0.8233	76.57	
10.032	147.437	104.000	187.20	0.023715	41.478	5.5447	42.167	0.024109	0.18035	0.8229	76.53	
10.071	148.000	104.059	187.31	0.023701	41.453	5.5415	42.192	0.024124	0.18046	0.8224	76.49	
10.207	150.000	104.268	187.68	0.023652	41.367	5.5300	42.279	0.024174	0.18083	0.8207	76.33	
10.323	151.705	104.444	188.00	0.023610	41.294	5.5202	42.354	0.024217	0.18115	0.8193	76.20	
10.343	152.000	104.476	188.06	0.023603	41.281	5.5185	42.368	0.024224	0.18121	0.8190	76.17	
10.479	154.000	104.681	188.43	0.023554	41.196	5.5071	42.455	0.024274	0.18158	0.8173	76.01	
10.615	156.000	104.884	188.79	0.023506	41.111	5.4957	42.543	0.024324	0.18196	0.8156	75.86	
10.694	157.164	105.000	189.00	0.023478	41.062	5.4892	42.593	0.024353	0.18218	0.8147	75.77	
10.751	158.000	105.085	189.15	0.023457	41.027	5.4844	42.631	0.024374	0.18233	0.8139	75.70	
10.887	160.000	105.284	189.51	0.023409	40.942	5.4732	42.718	0.024425	0.18271	0.8123	75.55	
11.000	161.656	105.447	189.80	0.023370	40.859	5.4640	42.790	0.024466	0.18302	0.8109	75.42	
11.023	162.000	105.482	189.87	0.023361	40.859	5.4620	42.806	0.024475	0.18308	0.8106	75.39	
11.075	162.761	105.556	190.00	0.023343	40.827	5.4578	42.839	0.024493	0.18322	0.8100	75.33	
11.159	164.000	105.678	190.22	0.023314	40.775	5.4509	42.893	0.024525	0.18346	0.8090	75.24	
11.296	166.000	105.872	190.57	0.023266	40.692	5.4337	42.981	0.024575	0.18383	0.8073	75.08	
11.387	167.341	106.000	190.80	0.023235	40.637	5.4324	43.039	0.024608	0.18408	0.8062	74.98	
11.432	168.000	106.064	190.92	0.023219	40.609	5.4287	43.068	0.024625	0.18421	0.8057	74.93	
11.466	168.500	106.111	191.00	0.023207	40.589	5.4260	43.090	0.024637	0.18430	0.8053	74.89	
11.568	170.000	106.255	191.26	0.023172	40.527	5.4177	43.156	0.024675	0.18458	0.8040	74.78	
11.704	172.000	106.444	191.60	0.023125	40.445	5.4067	43.244	0.024725	0.18496	0.8024	74.63	
11.840	174.000	106.632	191.94	0.023078	40.363	5.3957	43.332	0.024775	0.18533	0.8008	74.48	
11.866	174.382	106.667	192.00	0.023069	40.347	5.3937	43.348	0.024785	0.18540	0.8005	74.45	
11.976	176.000	106.818	192.27	0.023031	40.281	5.3848	43.419	0.024826	0.18571	0.7992	74.33	
12.000	176.352	106.850	192.33	0.023023	40.267	5.3829	43.434	0.024834	0.18577	0.7989	74.30	
12.111	177.981	107.000	192.60	0.022985	40.201	5.3741	43.506	0.024875	0.18608	0.7976	74.18	
12.112	178.000	107.002	192.60	0.022985	40.200	5.3739	43.507	0.024876	0.18608	0.7975	74.18	
12.248	180.000	107.186	192.93	0.022938	40.119	5.3631	43.595	0.024926	0.18646	0.7959	74.03	
12.276	180.410	107.222	193.00	0.022929	40.102	5.3609	43.613	0.024936	0.18654	0.7956	74.00	
12.384	182.000	107.367	193.26	0.022892	40.038	5.3523	43.683	0.024976	0.18684	0.7943	73.88	
12.520	184.000	107.548	193.59	0.022846	39.957	5.3415	43.771	0.025027	0.18721	0.7927	73.73	
12.657	186.000	107.726	193.91	0.022800	39.877	5.3307	43.860	0.025077	0.18759	0.7911	73.58	
12.696	186.585	107.778	194.00	0.022787	39.854	5.3277	43.885	0.025092	0.18770	0.7907	73.54	

TABLE 7 CONTINUED

SATURATED LIQUID NITROGEN

PRESSURE			TEMPERATURE		DENSITY		VOLUME		LIQ VOLUME CORRECTION FACTOR		DENSITY RATIO	
ATM	PSIA	KELVIN	RANKINE	GRAM-MOLE/CM ³	LB/FT ³	LB/GAL	CM ³ /GRAM-MOLE	FT ³ /LB	GAL/LB			
12.793	188.000	107.904	194.23	0.022754	39.797	5.3200	43.948	0.025128	0.18797	0.7895		73.43
12.867	189.097	108.000	194.40	0.022729	39.753	5.3142	43.996	0.025155	0.18817	0.7887		73.35
12.929	190.000	108.080	194.54	0.022708	39.717	5.3093	44.037	0.025178	0.18835	0.7880		73.28
13.000	191.048	108.171	194.71	0.022685	39.675	5.3038	44.083	0.025205	0.18854	0.7871		73.21
13.065	192.000	108.255	194.86	0.022663	39.637	5.2987	44.125	0.025229	0.18873	0.7864		73.14
13.127	192.910	108.333	195.00	0.022642	39.601	5.2939	44.165	0.025252	0.18890	0.7857		73.07
13.201	194.000	108.428	195.17	0.022617	39.557	5.2880	44.214	0.025280	0.18911	0.7848		72.99
13.337	196.000	108.601	195.48	0.022572	39.478	5.2774	44.303	0.025331	0.18949	0.7832		72.84
13.473	198.000	108.772	195.79	0.022527	39.399	5.2668	44.392	0.025382	0.18987	0.7816		72.70
13.567	199.386	108.889	196.00	0.022495	39.344	5.2595	44.453	0.025417	0.19013	0.7806		72.60
13.609	200.000	108.941	196.09	0.022481	39.320	5.2563	44.481	0.025433	0.19025	0.7801		72.55
13.657	200.700	109.000	196.20	0.022466	39.292	5.2526	44.512	0.025450	0.19038	0.7795		72.50
13.949	205.000	109.360	196.85	0.022369	39.123	5.2300	44.705	0.025560	0.19121	0.7762		72.19
14.000	205.744	109.422	196.96	0.022352	39.094	5.2261	44.738	0.025580	0.19135	0.7756		72.14
14.019	206.016	109.444	197.00	0.022346	39.083	5.2246	44.750	0.025587	0.19140	0.7754		72.12
14.290	210.000	109.772	197.59	0.022257	38.927	5.2038	44.930	0.025689	0.19217	0.7723		71.83
14.480	212.803	110.000	198.00	0.022194	38.817	5.1891	45.057	0.025762	0.19271	0.7701		71.63
14.630	215.000	110.177	198.32	0.022145	38.732	5.1777	45.156	0.025819	0.19314	0.7684		71.47
14.953	219.747	110.556	199.00	0.022040	38.547	5.1530	45.373	0.025942	0.19406	0.7648		71.13
14.970	220.000	110.576	199.04	0.022034	38.537	5.1517	45.384	0.025949	0.19411	0.7646		71.11
15.000	220.440	110.610	199.10	0.022024	38.520	5.1494	45.405	0.025961	0.19420	0.7642		71.08
15.310	225.000	110.967	199.74	0.021923	38.343	5.1257	45.614	0.026080	0.19509	0.7607		70.75
15.339	225.419	111.000	199.80	0.021914	38.327	5.1236	45.633	0.026091	0.19518	0.7604		70.72
15.436	226.853	111.111	200.00	0.021882	38.271	5.1161	45.699	0.026129	0.19546	0.7593		70.62
15.651	230.000	111.353	200.44	0.021812	38.150	5.0999	45.845	0.026213	0.19608	0.7569		70.39
15.931	234.121	111.667	201.00	0.021721	37.990	5.0786	46.037	0.026322	0.19691	0.7537		70.10
15.991	235.000	111.733	201.12	0.021702	37.957	5.0740	46.079	0.026346	0.19708	0.7530		70.04
16.000	235.136	111.743	201.14	0.021699	37.951	5.0733	46.085	0.026350	0.19711	0.7529		70.03
16.233	238.561	112.000	201.60	0.021624	37.819	5.0557	46.246	0.026442	0.19780	0.7503		69.78
16.331	240.000	112.107	201.79	0.021592	37.764	5.0483	46.314	0.026480	0.19809	0.7492		69.68
16.437	241.555	112.222	202.00	0.021558	37.704	5.0403	46.387	0.026523	0.19840	0.7480		69.57
16.671	245.000	112.476	202.46	0.021482	37.571	5.0225	46.551	0.026616	0.19910	0.7454		69.33
16.954	249.156	112.778	203.00	0.021390	37.411	5.0011	46.750	0.026730	0.19996	0.7422		69.03
17.000	249.832	112.827	203.09	0.021375	37.385	4.9976	46.783	0.026749	0.20009	0.7417		68.98
17.011	250.000	112.839	203.11	0.021372	37.379	4.9968	46.791	0.026753	0.20013	0.7416		68.97
17.164	252.244	113.000	203.40	0.021322	37.292	4.9852	46.900	0.026815	0.20059	0.7399		68.81
17.352	255.000	113.197	203.75	0.021261	37.186	4.9710	47.033	0.026892	0.20117	0.7378		68.62
17.483	256.927	113.333	204.00	0.021219	37.112	4.9611	47.127	0.026946	0.20157	0.7363		68.48
17.692	260.000	113.550	204.39	0.021151	36.993	4.9453	47.278	0.027032	0.20221	0.7339		68.26
18.000	264.528	113.865	204.96	0.021052	36.819	4.9219	47.503	0.027160	0.20317	0.7305		67.94
18.023	264.871	113.889	205.00	0.021044	36.805	4.9202	47.520	0.027170	0.20324	0.7302		67.91
18.032	265.000	113.898	205.02	0.021041	36.801	4.9195	47.526	0.027174	0.20327	0.7301		67.90
18.133	266.481	114.000	205.20	0.021008	36.743	4.9119	47.600	0.027216	0.20359	0.7290		67.80
18.372	270.000	114.241	205.63	0.020931	36.607	4.8937	47.777	0.027317	0.20434	0.7263		67.55
18.576	272.991	114.444	206.00	0.020865	36.492	4.8782	47.928	0.027403	0.20499	0.7240		67.33

TABLE 7 CONTINUED

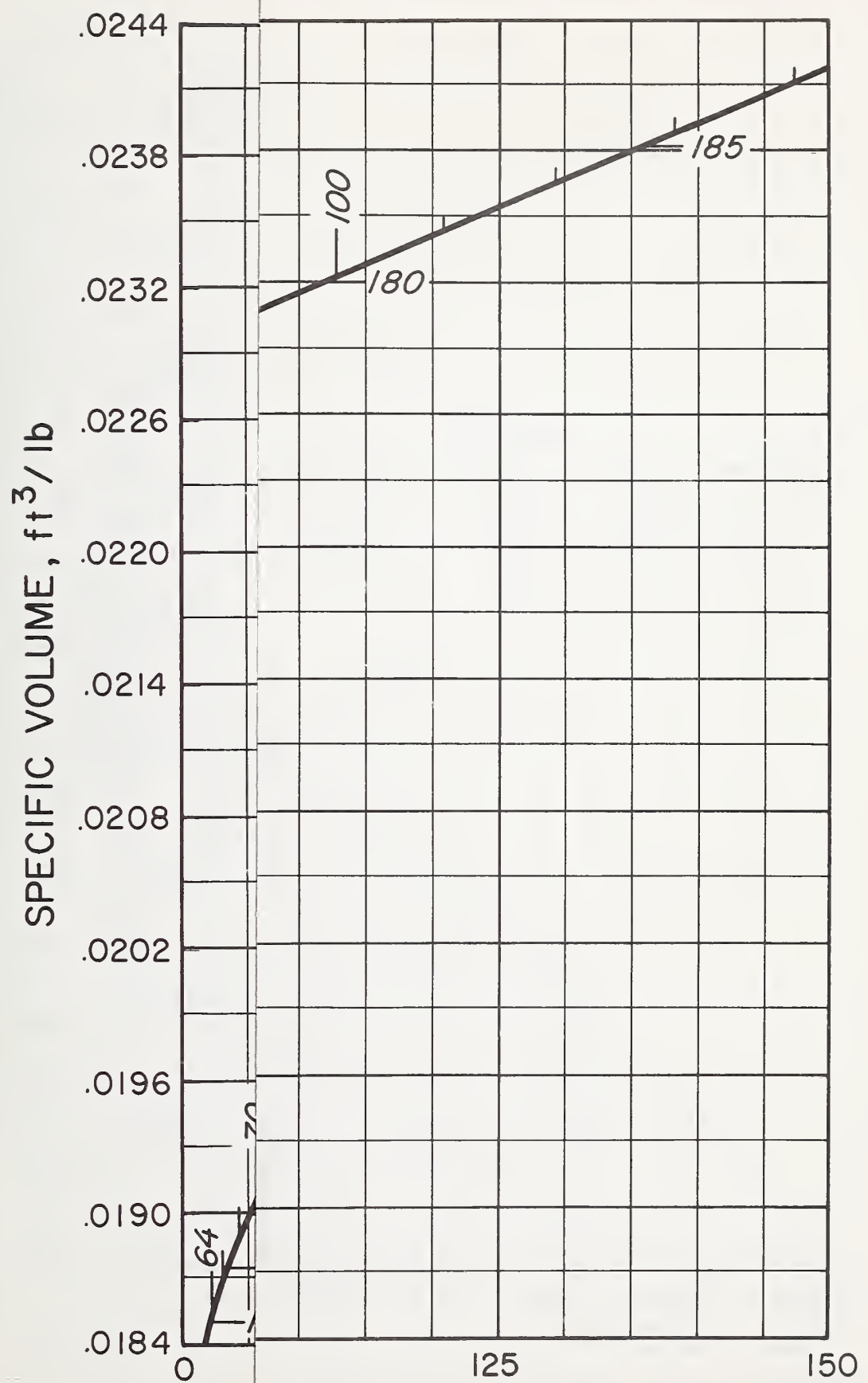
SATURATED LIQUID NITROGEN

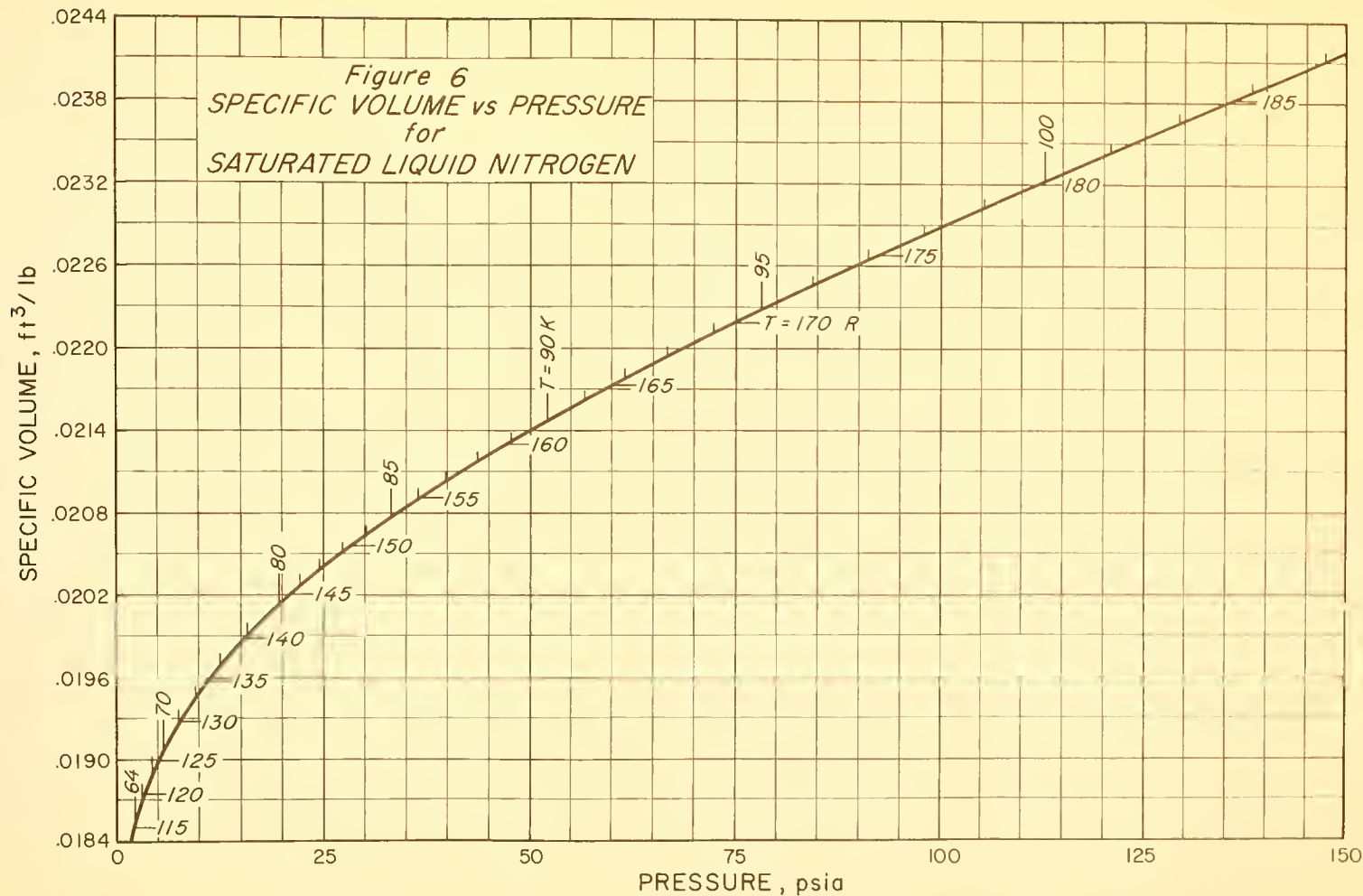
ATM	PSIA	TEMPERATURE			DENSITY LB/FT ³	LB/GAL	CM ³ / GRAM-MOLE	VOLUME FT ³ /LB	GAL/LB	LIQ VOLUME CORRECTION FACTOR	DENSITY RATIO	
		KELVIN	RANKINE	GRAM-MOLE/ CM ³							NTP (70°F)	VOLUME CORRECTION FACTOR*
18.713	275.000	114.580	206.24	0.020820	36.414	4.8678	48.030	0.027462	0.20543	0.7224	67.19	
19.000	279.224	114.863	206.75	0.020726	36.250	4.8459	48.247	0.027586	0.20636	0.7192	66.89	
19.053	280.000	114.915	206.85	0.020709	36.220	4.8419	48.288	0.027609	0.20653	0.7186	66.83	
19.140	281.288	115.000	207.00	0.020681	36.170	4.8352	48.354	0.027647	0.20682	0.7176	66.74	
19.393	285.000	115.245	207.44	0.020598	36.026	4.8159	48.548	0.027758	0.20764	0.7147	66.47	
19.717	289.766	115.556	208.00	0.020492	35.840	4.7911	48.800	0.027902	0.20872	0.7110	66.13	
19.733	290.000	115.571	208.03	0.020486	35.831	4.7898	48.813	0.027909	0.20878	0.7109	66.11	
20.000	293.920	115.823	208.48	0.020399	35.677	4.7693	49.023	0.028029	0.20967	0.7078	65.83	
20.073	295.000	115.893	208.61	0.020375	35.635	4.7637	49.081	0.028063	0.20992	0.7070	65.75	
20.188	296.580	116.000	208.80	0.020337	35.569	4.7548	49.172	0.028115	0.21031	0.7057	65.63	
20.307	298.427	116.111	209.00	0.020297	35.500	4.7456	49.267	0.028169	0.21072	0.7043	65.50	
20.414	300.000	116.211	209.18	0.020262	35.438	4.7374	49.353	0.028218	0.21109	0.7031	65.39	
20.754	305.000	116.525	209.74	0.020149	35.240	4.7109	49.630	0.028377	0.21227	0.6991	65.02	
20.909	307.275	116.667	210.00	0.020097	35.150	4.6989	49.758	0.028450	0.21282	0.6974	64.86	
21.000	308.616	116.750	210.15	0.020067	35.097	4.6917	49.833	0.028493	0.21314	0.6963	64.76	
21.094	310.000	116.835	210.30	0.020035	35.041	4.6844	49.912	0.028538	0.21348	0.6952	64.66	
21.276	312.675	117.000	210.60	0.019974	34.935	4.6701	50.064	0.028625	0.21413	0.6931	64.46	
21.434	315.000	117.142	210.86	0.019921	34.842	4.6576	50.198	0.028701	0.21470	0.6912	64.29	
21.524	316.313	117.222	211.00	0.019891	34.789	4.6506	50.274	0.028745	0.21503	0.6902	64.19	
21.775	320.000	117.446	211.40	0.019806	34.640	4.6307	50.490	0.028868	0.21595	0.6872	63.92	
22.000	323.312	117.645	211.76	0.019729	34.506	4.6128	50.686	0.028980	0.21679	0.6846	63.67	
22.115	325.000	117.745	211.94	0.019690	34.438	4.6037	50.787	0.029038	0.21722	0.6832	63.54	
22.152	325.543	117.778	212.00	0.019678	34.416	4.6007	50.819	0.029057	0.21736	0.6828	63.50	
22.407	329.290	118.000	212.40	0.019590	34.263	4.5802	51.046	0.029186	0.21833	0.6792	63.22	
22.455	330.000	118.042	212.48	0.019573	34.234	4.5764	51.090	0.029211	0.21851	0.6792	63.17	
22.793	334.969	118.333	213.00	0.019456	34.029	4.5490	51.397	0.029387	0.21983	0.6751	62.79	
22.795	335.000	118.335	213.00	0.019456	34.028	4.5488	51.399	0.029388	0.21984	0.6751	62.79	
23.000	338.008	118.510	213.32	0.019384	33.903	4.5322	51.588	0.029496	0.22065	0.6726	62.56	
23.136	340.000	118.625	213.53	0.019337	33.820	4.5211	51.714	0.029568	0.22119	0.6710	62.40	
23.448	344.594	118.889	214.00	0.019225	33.627	4.4953	52.011	0.029738	0.22245	0.6672	62.05	
23.476	345.000	118.912	214.04	0.019217	33.610	4.4931	52.037	0.029753	0.22257	0.6668	62.02	
23.581	346.543	119.000	214.20	0.019180	33.545	4.4843	52.138	0.029810	0.22300	0.6655	61.90	
23.816	350.000	119.196	214.55	0.019096	33.399	4.4647	52.367	0.029941	0.22398	0.6626	61.63	
24.000	352.704	119.348	214.83	0.019030	33.289	4.4493	52.549	0.030045	0.22475	0.6603	61.41	
24.117	354.422	119.444	215.00	0.018988	33.209	4.4395	52.665	0.030112	0.22525	0.6589	61.28	
24.156	355.000	119.477	215.06	0.018974	33.185	4.4361	52.705	0.030135	0.22542	0.6584	61.23	
24.496	360.000	119.755	215.56	0.018850	32.968	4.4072	53.051	0.030332	0.22690	0.6541	60.83	
24.800	364.456	120.000	216.00	0.018738	32.773	4.3811	53.367	0.030513	0.22825	0.6502	60.47	
24.837	365.000	120.000	216.05	0.018725	32.749	4.3779	53.406	0.030535	0.22842	0.6497	60.43	
25.000	367.400	120.161	216.29	0.018664	32.643	4.3637	53.580	0.030635	0.22916	0.6476	60.23	
25.177	370.000	120.302	216.54	0.018598	32.527	4.3482	53.771	0.030744	0.22998	0.6453	60.02	
25.497	374.701	120.556	217.00	0.018477	32.315	4.3199	54.123	0.030945	0.23149	0.6411	59.63	
25.517	375.000	120.572	217.03	0.018469	32.302	4.3181	54.145	0.030958	0.23158	0.6408	59.60	
25.857	380.000	120.838	217.51	0.018338	32.073	4.2876	54.531	0.031179	0.23323	0.6363	59.18	
26.000	382.096	120.950	217.71	0.018283	31.976	4.2746	54.696	0.031273	0.23394	0.6344	59.00	

TABLE 7 CONTINUED

SATURATED LIQUID NITROGEN

ATM	PSIA	TEMPERATURE		DENSITY LB/FT ³	LB/GAL	CM ³ / GRAM-MOLE	VOLUME FT ³ /LB	GAL/LB	DENSITY RATIO	
		KELVIN	RANKINE	GRAM-MOLE/ CM ³					LIQ VOLUME CORRECTION FACTOR	NTP (70°F) VOLUME* CORRECTION FACTOR
26.065	383.051	121.000	217.80	0.018257	4.2687	54.772	0.031317	0.23426	0.5335	58.92
26.198	385.000	121.103	217.98	0.018205	4.2565	54.929	0.031406	0.23493	0.6317	58.75
26.209	385.160	121.111	218.00	0.018201	4.2555	54.941	0.031413	0.23499	0.6316	58.74
26.538	390.000	121.364	218.46	0.018071	4.2250	55.339	0.031640	0.23669	0.6270	58.32
26.878	395.000	121.623	218.92	0.017933	4.1929	55.762	0.031883	0.23850	0.6223	57.87
26.935	395.833	121.667	219.00	0.017910	4.1874	55.835	0.031924	0.23881	0.6215	57.80
27.000	396.792	121.716	219.09	0.017883	4.1812	55.918	0.031972	0.23916	0.6205	57.71
27.218	400.000	121.880	219.38	0.017793	4.1602	56.201	0.032134	0.24038	0.6174	57.42
27.378	402.351	122.000	219.60	0.017727	4.1445	56.413	0.032255	0.24128	0.6151	57.21
27.559	405.000	122.134	219.84	0.017651	4.1268	56.655	0.032393	0.24232	0.6125	56.96
27.677	406.739	122.222	220.00	0.017600	4.1150	56.818	0.032486	0.24301	0.6107	56.80
27.999	410.000	122.386	220.30	0.017505	4.0927	57.127	0.032663	0.24434	0.6074	56.49
28.000	411.488	122.461	220.43	0.017461	4.0824	57.272	0.032746	0.24495	0.6059	56.35
28.239	415.000	122.636	220.74	0.017356	4.0578	57.618	0.032944	0.24644	0.6022	56.01
28.434	417.867	122.778	221.00	0.017268	4.0374	57.909	0.033110	0.24768	0.5992	55.73
28.579	420.000	122.883	221.19	0.017203	4.0221	58.130	0.033237	0.24863	0.5969	55.52
28.741	422.383	123.000	221.40	0.017129	4.0047	58.382	0.033381	0.24970	0.5943	55.28
28.919	425.000	123.128	221.63	0.017046	3.9854	58.665	0.033542	0.25091	0.5915	55.01
29.000	426.184	123.186	221.73	0.017008	3.9766	58.795	0.033617	0.25147	0.5902	54.89
29.207	429.228	123.333	222.00	0.016910	3.9536	59.137	0.033812	0.25293	0.5868	54.57
29.260	430.000	123.371	222.07	0.016885	3.9477	59.225	0.033863	0.25331	0.5859	54.49
29.500	435.000	123.611	222.50	0.016719	3.9089	59.813	0.034199	0.25583	0.5801	53.95
29.940	440.000	123.850	222.93	0.016547	3.8688	60.433	0.034553	0.25848	0.5742	53.40
29.996	440.827	123.889	223.00	0.016518	3.8621	60.539	0.034614	0.25893	0.5732	53.31
30.000	440.880	123.891	223.00	0.016516	3.8616	60.546	0.034618	0.25896	0.5731	53.30
30.156	443.175	124.000	223.20	0.016435	3.8427	60.844	0.034789	0.26024	0.5703	53.04
30.280	445.000	124.086	223.35	0.016370	3.8274	61.088	0.034928	0.26128	0.5680	52.83
30.621	450.000	124.320	223.78	0.016186	3.7843	61.783	0.035325	0.26425	0.5616	52.23
30.802	452.668	124.444	224.00	0.016084	3.7606	62.172	0.035547	0.26591	0.5581	51.91
30.961	455.000	124.552	224.19	0.015994	3.7395	62.523	0.035748	0.26742	0.5550	51.62
31.000	455.576	124.579	224.24	0.015972	3.7342	62.612	0.035799	0.26779	0.5542	51.54
31.301	460.000	124.784	224.61	0.015792	3.6923	63.323	0.036205	0.27084	0.5480	50.96
31.625	464.759	125.000	225.00	0.015594	3.6431	64.126	0.036665	0.27427	0.5411	50.33
31.641	465.000	125.012	225.02	0.015582	3.6431	64.177	0.036694	0.27449	0.5407	50.29
31.981	470.000	125.238	225.43	0.015360	3.5913	65.103	0.037223	0.27845	0.5330	49.57
32.000	470.272	125.250	225.45	0.015350	3.5889	65.146	0.037248	0.27864	0.5326	49.54
32.322	475.000	125.463	225.83	0.015125	3.5364	66.114	0.037801	0.28277	0.5248	48.81
32.465	477.104	125.556	226.00	0.015024	3.5128	66.559	0.038056	0.28468	0.5213	48.49
32.662	480.000	125.685	226.23	0.014875	3.4777	67.229	0.038439	0.28754	0.5161	48.00
33.000	484.968	125.903	226.63	0.014609	3.4157	68.450	0.039137	0.29276	0.5069	47.15
33.002	485.000	125.906	226.63	0.014604	3.4146	68.472	0.039150	0.29286	0.5068	47.13
33.150	487.168	126.000	226.80	0.014483	3.3863	69.045	0.039477	0.29531	0.5026	46.74
33.556	493.134	126.260	227.27	0.011230	2.6257	89.046	0.050913	0.38085	0.3897	36.24





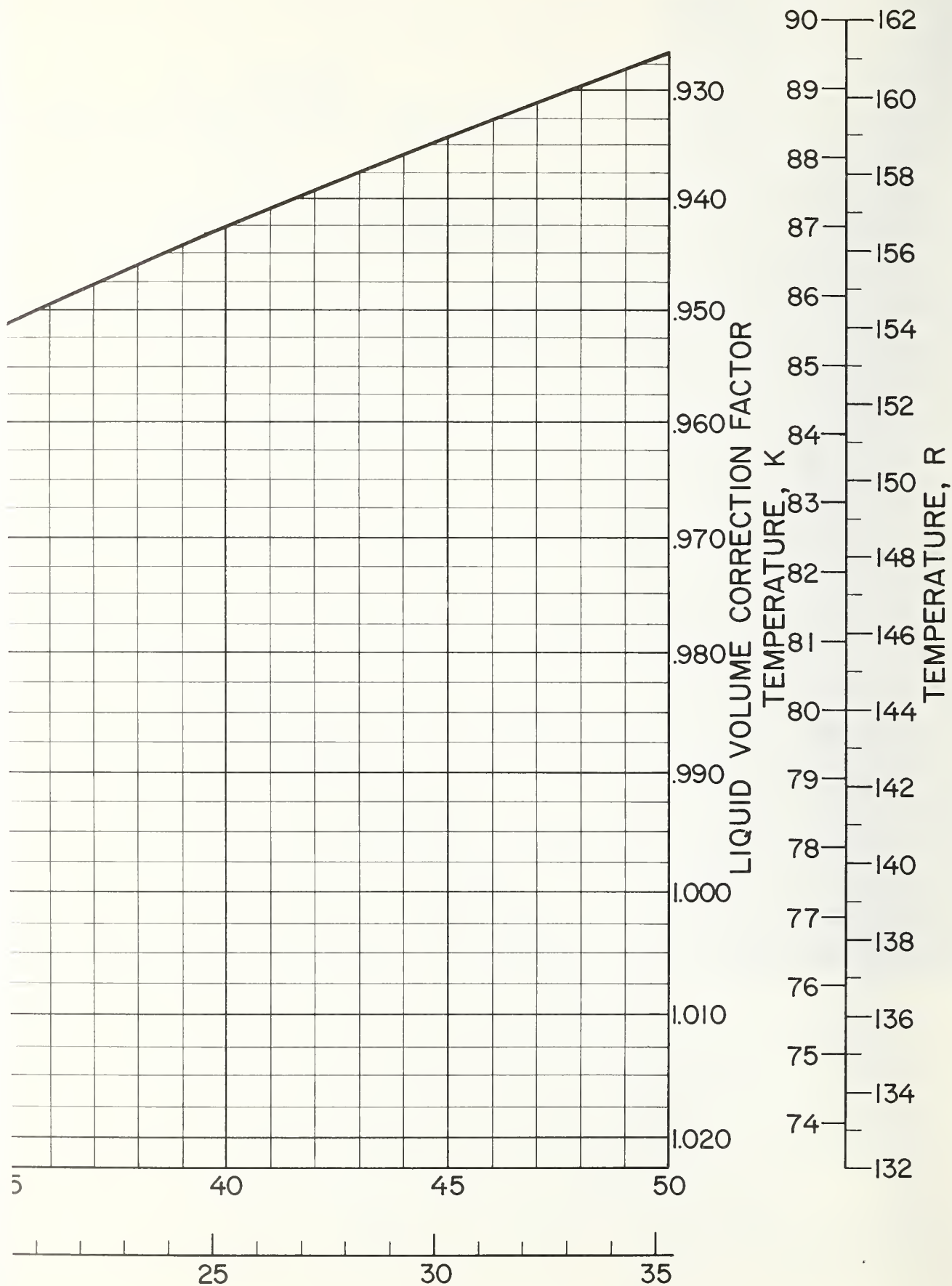


TABLE 8

DENSITY OF COMPRESSED LIQUID NITROGEN

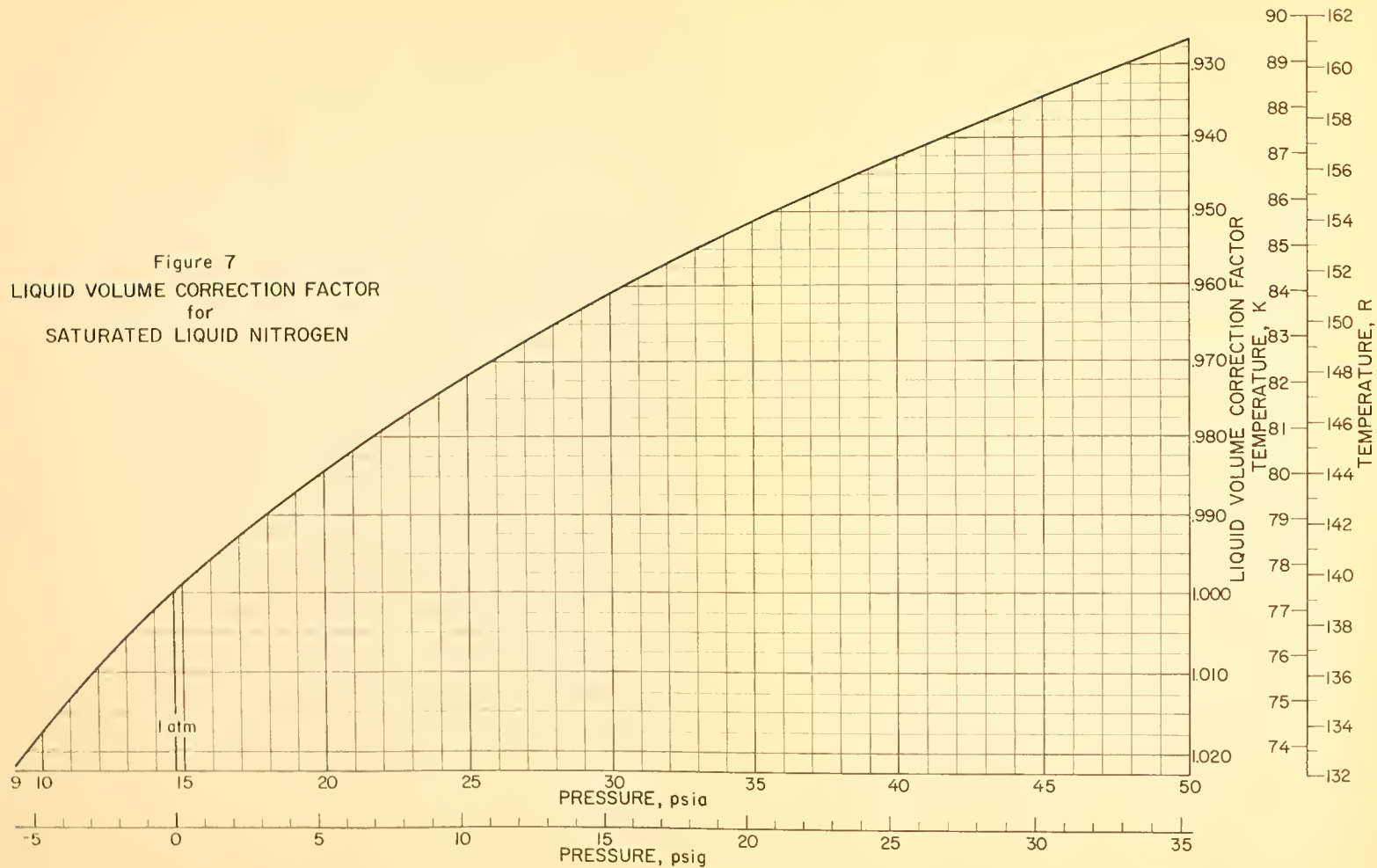
TABLE ENTRIES

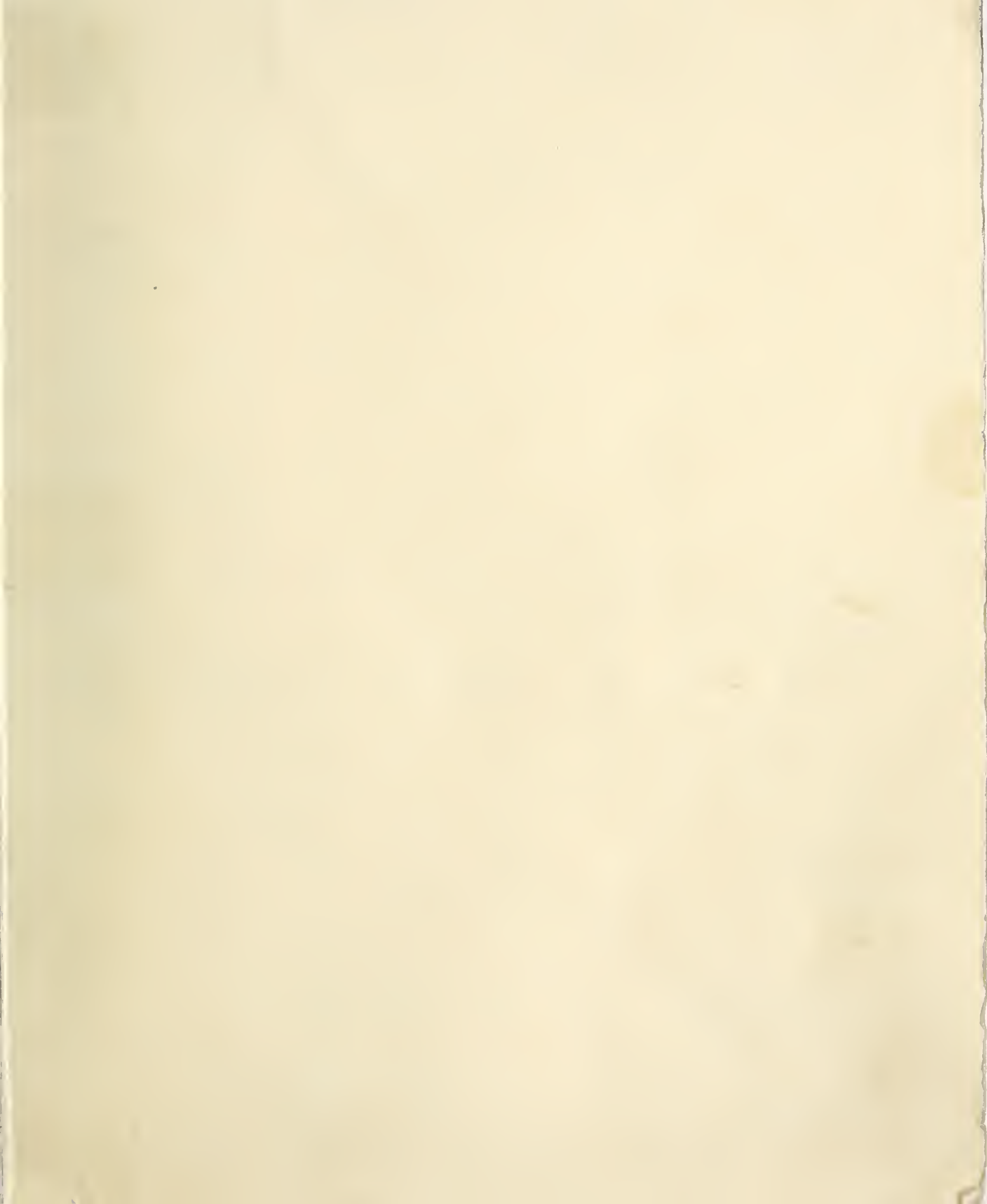
1. TEMPERATURE, K
2. TEMPERATURE, R
3. VAPOR PRESSURE, PSIA

1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS
2. NTP (70°F) VOLUME CORRECTION FACTOR, FT³/GAL
3. DENSITY, LB/GAL

PSIA ATM.	12.000 0.817	14.696 1.000	25.000 1.701	50.000 3.402	75.000 5.103	100.000 6.805	150.000 10.207	200.000 13.609	250.000 17.011	300.000 20.414	350.000 23.816	400.000 27.218	450.000 30.621
75.0 135.60 11.021	1.0133 94.24 6.8279	1.0134 94.25 6.8282	1.0136 94.26 6.8295	1.0140 94.31 6.8326	1.0145 94.35 6.8357	1.0149 94.39 6.8387	1.0158 94.48 6.8449	1.0167 94.56 6.8509	1.0176 94.64 6.8570	1.0185 94.73 6.8630	1.0194 94.81 6.8689	1.0203 94.89 6.8748	1.0212 94.97 6.8807
75.1 135.18 11.160	1.0128 94.19 6.8241	1.0128 94.20 6.8244	1.0130 94.21 6.8257	1.0135 94.26 6.8288	1.0139 94.30 6.8319	1.0144 94.34 6.8350	1.0153 94.43 6.8412	1.0162 94.51 6.8472	1.0171 94.59 6.8533	1.0180 94.68 6.8593	1.0189 94.76 6.8653	1.0198 94.84 6.8712	1.0206 94.92 6.8771
75.2 135.36 11.301	1.0122 94.14 6.8203	1.0123 94.14 6.8207	1.0124 94.16 6.8219	1.0129 94.20 6.8251	1.0134 94.25 6.8282	1.0138 94.29 6.8313	1.0147 94.37 6.8374	1.0156 94.46 6.8435	1.0166 94.54 6.8496	1.0174 94.63 6.8556	1.0183 94.71 6.8616	1.0192 94.79 6.8676	1.0201 94.87 6.8735
75.3 135.54 11.443	1.0116 94.09 6.8165	1.0117 94.09 6.8169	1.0119 94.11 6.8182	1.0123 94.15 6.8213	1.0128 94.19 6.8244	1.0133 94.24 6.8275	1.0142 94.32 6.8337	1.0151 94.41 6.8398	1.0160 94.49 6.8459	1.0169 94.58 6.8520	1.0178 94.66 6.8580	1.0187 94.74 6.8640	1.0196 94.82 6.8699
75.4 135.72 11.587	1.0111 94.03 6.8128	1.0111 94.04 6.8131	1.0113 94.06 6.8144	1.0118 94.10 6.8175	1.0123 94.14 6.8207	1.0127 94.19 6.8238	1.0136 94.27 6.8300	1.0146 94.36 6.8361	1.0155 94.44 6.8423	1.0164 94.52 6.8483	1.0173 94.61 6.8543	1.0181 94.69 6.8603	1.0190 94.77 6.8663
75.5 135.90 11.732	1.0105 93.98 6.8090	1.0106 93.99 6.8093	1.0108 94.00 6.8106	1.0112 94.05 6.8138	1.0117 94.09 6.8169	1.0122 94.13 6.8200	1.0131 94.22 6.8263	1.0140 94.31 6.8324	1.0149 94.39 6.8386	1.0158 94.47 6.8447	1.0167 94.56 6.8507	1.0176 94.64 6.8567	1.0185 94.72 6.8627
75.6 136.08 11.878	1.0100 93.93 6.8052	1.0100 93.93 6.8055	1.0102 93.95 6.8068	1.0107 94.00 6.8100	1.0111 94.04 6.8132	1.0116 94.08 6.8163	1.0125 94.17 6.8225	1.0135 94.25 6.8287	1.0144 94.34 6.8349	1.0153 94.42 6.8410	1.0162 94.51 6.8471	1.0171 94.59 6.8531	1.0179 94.67 6.8590
75.7 136.26 12.026	1.0094 93.88 6.8017	1.0096 93.90 6.8030	1.0101 93.94 6.8062	1.0106 93.99 6.8094	1.0110 94.03 6.8125	1.0116 94.08 6.8157	1.0125 94.12 6.8188	1.0135 94.20 6.8250	1.0144 94.29 6.8312	1.0153 94.37 6.8373	1.0162 94.46 6.8434	1.0171 94.54 6.8494	1.0179 94.62 6.8554
75.8 136.44 12.175	1.0089 93.83 6.7979	1.0091 93.85 6.7993	1.0095 93.89 6.8024	1.0100 93.94 6.8056	1.0105 93.98 6.8088	1.0110 94.03 6.8119	1.0114 94.07 6.8151	1.0123 94.15 6.8213	1.0133 94.24 6.8275	1.0142 94.32 6.8336	1.0151 94.41 6.8397	1.0160 94.49 6.8458	1.0169 94.57 6.8518
75.9 136.62 12.325	1.0083 93.78 6.7941	1.0085 93.80 6.7955	1.0090 93.84 6.7987	1.0095 93.88 6.8018	1.0099 93.93 6.8050	1.0109 94.01 6.8113	1.0118 94.10 6.8176	1.0127 94.19 6.8238	1.0136 94.27 6.8300	1.0145 94.36 6.8361	1.0154 94.44 6.8422	1.0163 94.52 6.8482	1.0172 94.60 6.8542
76.0 136.80 12.477	1.0078 93.72 6.7903	1.0079 93.74 6.7917	1.0084 93.79 6.7949	1.0089 93.83 6.7981	1.0094 93.88 6.8012	1.0103 93.96 6.8076	1.0112 94.05 6.8139	1.0122 94.14 6.8201	1.0131 94.22 6.8263	1.0140 94.31 6.8324	1.0149 94.39 6.8385	1.0158 94.47 6.8446	1.0167 94.55 6.8506
76.1 136.98 12.630	1.0072 93.67 6.7865	1.0074 93.69 6.7879	1.0079 93.73 6.7911	1.0083 93.78 6.7943	1.0088 93.82 6.7975	1.0098 93.91 6.8038	1.0107 94.00 6.8101	1.0116 94.08 6.8164	1.0125 94.17 6.8226	1.0135 94.25 6.8288	1.0144 94.34 6.8349	1.0153 94.42 6.8410	1.0162 94.50 6.8471
76.2 137.16 12.785	1.0066 93.62 6.7827	1.0068 93.64 6.7841	1.0073 93.68 6.7873	1.0078 93.73 6.7905	1.0083 93.77 6.7937	1.0092 93.86 6.8001	1.0101 93.95 6.8064	1.0111 94.03 6.8127	1.0120 94.12 6.8189	1.0129 94.20 6.8251	1.0138 94.29 6.8312	1.0147 94.37 6.8373	1.0156 94.45 6.8434
76.3 137.34 12.941	1.0061 93.57 6.7789	1.0063 93.59 6.7803	1.0067 93.63 6.7835	1.0072 93.67 6.7867	1.0077 93.72 6.7899	1.0086 93.81 6.7963	1.0096 93.89 6.8027	1.0105 93.98 6.8090	1.0114 94.07 6.8152	1.0124 94.15 6.8214	1.0133 94.24 6.8276	1.0142 94.32 6.8337	1.0151 94.40 6.8398
76.4 137.52 13.099	1.0055 93.51 6.7751	1.0057 93.53 6.7764	1.0062 93.58 6.7797	1.0067 93.62 6.7829	1.0071 93.67 6.7862	1.0081 93.76 6.7926	1.0090 93.84 6.7989	1.0100 93.93 6.8052	1.0109 94.02 6.8115	1.0118 94.10 6.8177	1.0127 94.19 6.8239	1.0136 94.27 6.8300	1.0145 94.35 6.8361
76.5 137.70 13.258	1.0049 93.46 6.7713	1.0051 93.48 6.7726	1.0056 93.52 6.7759	1.0061 93.56 6.7791	1.0066 93.61 6.7824	1.0075 93.70 6.7888	1.0085 93.79 6.7952	1.0094 93.88 6.8015	1.0103 93.97 6.8078	1.0113 94.05 6.8141	1.0122 94.14 6.8203	1.0131 94.22 6.8264	1.0140 94.30 6.8325
76.6 137.88 13.419	1.0044 93.41 6.7674	1.0046 93.43 6.7688	1.0050 93.47 6.7721	1.0055 93.52 6.7753	1.0060 93.56 6.7786	1.0070 93.65 6.7850	1.0079 93.74 6.7914	1.0089 93.83 6.7978	1.0098 93.91 6.8041	1.0107 94.00 6.8104	1.0116 94.09 6.8166	1.0125 94.17 6.8228	1.0134 94.25 6.8289
76.7 138.06 13.581	1.0038 93.36 6.7636	1.0040 93.37 6.7650	1.0045 93.42 6.7683	1.0050 93.46 6.7715	1.0054 93.51 6.7748	1.0064 93.60 6.7813	1.0074 93.69 6.7877	1.0083 93.78 6.7941	1.0092 93.86 6.8004	1.0102 93.95 6.8067	1.0111 94.04 6.8129	1.0120 94.12 6.8191	1.0129 94.20 6.8252
76.8 138.24 13.745	1.0032 93.30 6.7598	1.0034 93.32 6.7611	1.0039 93.37 6.7644	1.0044 93.41 6.7677	1.0049 93.46 6.7710	1.0058 93.55 6.7775	1.0068 93.64 6.7840	1.0077 93.72 6.7904	1.0087 93.81 6.7967	1.0096 93.90 6.8030	1.0106 93.99 6.8093	1.0115 94.07 6.8155	1.0124 94.15 6.8216
76.9 138.42 13.913	1.0026 93.25 6.7560	1.0029 93.27 6.7573	1.0033 93.31 6.7606	1.0038 93.36 6.7639	1.0043 93.41 6.7672	1.0053 93.50 6.7737	1.0062 93.58 6.7802	1.0072 93.67 6.7866	1.0081 93.76 6.7930	1.0091 93.85 6.7993	1.0100 93.93 6.8056	1.0109 94.02 6.8118	1.0118 94.10 6.8179

Figure 7
LIQUID VOLUME CORRECTION FACTOR
for
SATURATED LIQUID NITROGEN





1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA				TABLE ENTRIES									
				1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL									
PSIA	12.000	14.696	25.000	50.000	75.000	100.000	150.000	200.000	250.000	300.000	350.000	400.000	450.000
ATM.	0.817	1.000	1.701	3.402	5.103	6.805	10.207	13.609	17.011	20.414	23.816	27.218	30.621
77.0 138.60 14.076		1.0021 93.20 6.7521	1.0023 93.22 6.7535	1.0028 93.26 6.7568	1.0033 93.31 6.7601	1.0038 93.35 6.7634	1.0047 93.44 6.7699	1.0057 93.53 6.7764	1.0066 93.62 6.7829	1.0076 93.71 6.7893	1.0085 93.80 6.7956	1.0095 93.88 6.8019	1.0104 93.97 6.8082
77.1 138.78 14.245		1.0015 93.14 6.7483	1.0017 93.16 6.7496	1.0022 93.21 6.7530	1.0027 93.25 6.7563	1.0032 93.30 6.7596	1.0042 93.39 6.7662	1.0051 93.48 6.7727	1.0061 93.57 6.7791	1.0070 93.66 6.7856	1.0080 93.75 6.7919	1.0089 93.83 6.7982	1.0099 93.92 6.8045
77.2 138.96 14.414		1.0009 93.09 6.7444	1.0011 93.11 6.7458	1.0016 93.16 6.7491	1.0021 93.20 6.7525	1.0026 93.25 6.7558	1.0036 93.34 6.7624	1.0046 93.43 6.7689	1.0055 93.52 6.7754	1.0065 93.61 6.7818	1.0074 93.70 6.7882	1.0084 93.78 6.7946	1.0093 93.87 6.8008
77.3 139.14 14.585		1.0004 93.04 6.7406	1.0006 93.06 6.7420	1.0011 93.10 6.7453	1.0016 93.15 6.7486	1.0021 93.19 6.7520	1.0030 93.29 6.7586	1.0040 93.38 6.7651	1.0050 93.47 6.7717	1.0059 93.56 6.7781	1.0069 93.64 6.7845	1.0078 93.73 6.7909	1.0088 93.82 6.7972
77.4 139.32 14.758			1.0000 93.00 6.7381	1.0005 93.05 6.7415	1.0010 93.10 6.7448	1.0015 93.14 6.7482	1.0025 93.23 6.7548	1.0035 93.32 6.7614	1.0044 93.41 6.7679	1.0054 93.50 6.7744	1.0063 93.59 6.7808	1.0073 93.68 6.7872	1.0082 93.77 6.7935
77.5 139.50 14.933			0.9994 92.95 6.7342	0.9999 93.00 6.7376	1.0004 93.04 6.7410	1.0009 93.09 6.7443	1.0019 93.18 6.7510	1.0029 93.27 6.7576	1.0039 93.36 6.7642	1.0048 93.45 6.7707	1.0058 93.54 6.7771	1.0067 93.63 6.7835	1.0077 93.72 6.7899
77.6 139.68 15.108			0.9989 92.90 6.7304	0.9994 92.94 6.7338	0.9999 92.99 6.7372	1.0004 93.04 6.7405	1.0014 93.13 6.7472	1.0023 93.22 6.7538	1.0033 93.31 6.7604	1.0043 93.40 6.7669	1.0052 93.49 6.7734	1.0062 93.58 6.7798	1.0071 93.67 6.7862
77.7 139.86 15.286			0.9983 92.84 6.7265	0.9988 92.89 6.7299	0.9993 92.94 6.7333	0.9998 92.98 6.7367	1.0008 93.08 6.7434	1.0018 93.17 6.7500	1.0028 93.26 6.7566	1.0037 93.35 6.7632	1.0047 93.44 6.7697	1.0056 93.53 6.7761	1.0066 93.62 6.7825
77.8 140.04 15.465			0.9977 92.79 6.7227	0.9982 92.84 6.7261	0.9987 92.88 6.7295	0.9992 92.93 6.7329	1.0002 93.02 6.7395	1.0012 93.12 6.7463	1.0022 93.21 6.7529	1.0032 93.30 6.7594	1.0041 93.39 6.7660	1.0051 93.48 6.7724	1.0060 93.57 6.7788
77.9 140.22 15.646			0.9971 92.74 6.7188	0.9976 92.78 6.7222	0.9981 92.83 6.7256	0.9987 92.88 6.7290	0.9997 92.97 6.7358	1.0006 93.06 6.7425	1.0016 93.16 6.7491	1.0026 93.25 6.7557	1.0036 93.34 6.7622	1.0045 93.43 6.7687	1.0055 93.52 6.7751
78.0 140.40 15.828			0.9966 92.68 6.7149	0.9971 92.73 6.7184	0.9976 92.78 6.7218	0.9981 92.83 6.7252	0.9991 92.92 6.7320	1.0001 93.01 6.7387	1.0011 93.10 6.7453	1.0021 93.19 6.7520	1.0030 93.29 6.7585	1.0040 93.37 6.7650	1.0050 93.46 6.7715
78.1 140.58 16.012			0.9960 92.63 6.7110	0.9965 92.68 6.7145	0.9970 92.73 6.7179	0.9975 92.77 6.7213	0.9985 92.87 6.7281	0.9995 92.96 6.7349	1.0005 93.05 6.7416	1.0015 93.14 6.7482	1.0025 93.23 6.7548	1.0034 93.32 6.7613	1.0044 93.41 6.7678
78.2 140.76 16.197			0.9954 92.58 6.7072	0.9959 92.62 6.7106	0.9964 92.67 6.7141	0.9969 92.72 6.7175	0.9980 92.81 6.7243	0.9990 92.91 6.7311	1.0000 93.00 6.7378	1.0009 93.09 6.7444	1.0019 93.18 6.7510	1.0029 93.27 6.7576	1.0039 93.36 6.7641
78.3 140.94 16.384			0.9948 92.52 6.7033	0.9953 92.57 6.7068	0.9959 92.62 6.7102	0.9964 92.67 6.7137	0.9974 92.76 6.7205	0.9984 92.85 6.7273	0.9994 92.95 6.7340	1.0004 93.04 6.7407	1.0014 93.13 6.7473	1.0023 93.22 6.7539	1.0033 93.31 6.7604
78.4 141.12 16.573			0.9943 92.47 6.6994	0.9948 92.52 6.7029	0.9953 92.57 6.7063	0.9958 92.61 6.7098	0.9968 92.71 6.7167	0.9978 92.80 6.7235	0.9988 92.89 6.7302	0.9998 92.99 6.7369	1.0008 93.08 6.7436	1.0018 93.17 6.7502	1.0028 93.26 6.7567
78.5 141.30 16.763			0.9937 92.42 6.6955	0.9942 92.46 6.6990	0.9947 92.51 6.7025	0.9952 92.56 6.7059	0.9963 92.65 6.7128	0.9973 92.75 6.7197	0.9983 92.84 6.7264	0.9993 92.94 6.7332	1.0003 93.03 6.7398	1.0012 93.12 6.7464	1.0022 93.21 6.7530
78.6 141.48 16.955			0.9931 92.36 6.6916	0.9936 92.41 6.6951	0.9941 92.46 6.6986	0.9947 92.51 6.7021	0.9957 92.60 6.7090	0.9967 92.70 6.7159	0.9977 92.79 6.7227	0.9987 92.88 6.7294	0.9997 92.98 6.7361	1.0007 93.07 6.7427	1.0017 93.16 6.7493
78.7 141.66 17.149			0.9925 92.31 6.6877	0.9930 92.36 6.6912	0.9936 92.40 6.6947	0.9941 92.45 6.6982	0.9951 92.55 6.7052	0.9961 92.64 6.7120	0.9971 92.74 6.7189	0.9981 92.83 6.7256	0.9991 92.92 6.7323	1.0001 93.02 6.7390	1.0011 93.11 6.7456
78.8 141.84 17.344			0.9919 92.25 6.6838	0.9925 92.30 6.6873	0.9930 92.35 6.6909	0.9935 92.40 6.6944	0.9945 92.50 6.7013	0.9956 92.59 6.7082	0.9966 92.69 6.7151	0.9976 92.78 6.7219	0.9986 92.87 6.7286	0.9996 92.96 6.7353	1.0006 93.06 6.7419
78.9 142.02 17.542			0.9914 92.20 6.6799	0.9919 92.25 6.6834	0.9924 92.30 6.6870	0.9929 92.35 6.6905	0.9940 92.44 6.6975	0.9950 92.54 6.7044	0.9960 92.63 6.7113	0.9970 92.73 6.7181	0.9980 92.82 6.7248	0.9990 92.91 6.7315	1.0000 93.00 6.7382

1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA		TABLE ENTRIES 1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, L3/GAL											
PSIA	12.000 ATM.	14.696 1.000	25.000 1.701	50.000 3.402	75.000 5.103	100.000 6.805	150.000 10.207	200.000 13.609	250.000 17.011	300.000 20.414	350.000 23.816	400.000 27.218	450.000 30.621
79.0 142.20 17.740			0.9908 92.15 6.6760	0.9913 92.20 6.6795	0.9918 92.24 6.6831	0.9924 92.29 6.6866	0.9934 92.33 6.6936	0.9944 92.49 6.7006	0.9955 92.59 6.7075	0.9965 92.67 6.7143	0.9975 92.77 6.7211	0.9985 92.86 6.7278	0.9995 92.95 6.7345
79.1 142.38 17.941			0.9902 92.09 6.6721	0.9907 92.14 6.6756	0.9913 92.19 6.6792	0.9918 92.24 6.6827	0.9928 92.34 6.6893	0.9939 92.43 6.6967	0.9949 92.53 6.7037	0.9959 92.62 6.7105	0.9969 92.72 6.7173	0.9979 92.81 6.7241	0.9989 92.90 6.7307
79.2 142.56 18.143			0.9896 92.04 6.6681	0.9901 92.09 6.6717	0.9907 92.14 6.6753	0.9912 92.19 6.6788	0.9923 92.28 6.6859	0.9933 92.38 6.6929	0.9943 92.48 6.6999	0.9953 92.57 6.7067	0.9964 92.66 6.7136	0.9974 92.76 6.7203	0.9984 92.85 6.7270
79.3 142.74 18.347			0.9890 91.98 6.6642	0.9896 92.03 6.6678	0.9901 92.08 6.6714	0.9906 92.13 6.6750	0.9917 92.23 6.6820	0.9927 92.33 6.6891	0.9938 92.42 6.6960	0.9948 92.52 6.7029	0.9958 92.61 6.7098	0.9968 92.71 6.7166	0.9978 92.80 6.7233
79.4 142.92 18.552			0.9885 91.93 6.6603	0.9890 91.98 6.6639	0.9895 92.03 6.6675	0.9901 92.08 6.6711	0.9911 92.18 6.6782	0.9922 92.27 6.6852	0.9932 92.37 6.6922	0.9942 92.47 6.6991	0.9952 92.56 6.7060	0.9962 92.65 6.7128	0.9973 92.75 6.7196
79.5 143.10 18.760			0.9879 91.88 6.6564	0.9884 91.93 6.6600	0.9889 91.97 6.6636	0.9895 92.02 6.6672	0.9905 92.12 6.6743	0.9916 92.22 6.6814	0.9926 92.32 6.6884	0.9937 92.41 6.6953	0.9947 92.51 6.7022	0.9957 92.60 6.7091	0.9967 92.70 6.7158
79.6 143.28 18.969			0.9873 91.82 6.6524	0.9878 91.87 6.6561	0.9884 91.92 6.6597	0.9889 91.97 6.6633	0.9900 92.07 6.6704	0.9910 92.17 6.6775	0.9921 92.26 6.6846	0.9931 92.36 6.6915	0.9941 92.46 6.6985	0.9951 92.55 6.7053	0.9961 92.64 6.7121
79.7 143.46 19.180			0.9867 91.77 6.6485	0.9872 91.82 6.6521	0.9878 91.87 6.6558	0.9883 91.92 6.6594	0.9894 92.02 6.6666	0.9904 92.11 6.6737	0.9915 92.21 6.6807	0.9925 92.31 6.6877	0.9936 92.40 6.6947	0.9946 92.50 6.7016	0.9956 92.59 6.7084
79.8 143.64 19.393			0.9861 91.71 6.6445	0.9867 91.76 6.6482	0.9872 91.81 6.6518	0.9877 91.86 6.6555	0.9888 91.96 6.6627	0.9899 92.06 6.6698	0.9909 92.16 6.6769	0.9920 92.26 6.6839	0.9930 92.35 6.6909	0.9940 92.45 6.6978	0.9950 92.54 6.7046
79.9 143.82 19.607			0.9855 91.66 6.6406	0.9861 91.71 6.6443	0.9866 91.76 6.6479	0.9872 91.81 6.6516	0.9882 91.91 6.6588	0.9893 92.01 6.6650	0.9904 92.11 6.6721	0.9914 92.20 6.6801	0.9924 92.30 6.6871	0.9935 92.40 6.6940	0.9945 92.49 6.7009
80.0 144.00 19.823			0.9849 91.60 6.6366	0.9855 91.65 6.6403	0.9860 91.70 6.6440	0.9866 91.76 6.6477	0.9877 91.86 6.6549	0.9887 91.95 6.6621	0.9898 92.05 6.6692	0.9908 92.15 6.6763	0.9919 92.25 6.6833	0.9929 92.34 6.6903	0.9939 92.44 6.6972
80.1 144.18 20.041			0.9844 91.55 6.6327	0.9849 91.60 6.6364	0.9855 91.65 6.6401	0.9860 91.70 6.6437	0.9871 91.80 6.6510	0.9881 91.90 6.6582	0.9892 92.00 6.6654	0.9903 92.10 6.6725	0.9913 92.19 6.6795	0.9923 92.29 6.6865	0.9934 92.39 6.6934
80.2 144.36 20.261			0.9838 91.49 6.6287	0.9843 91.54 6.6324	0.9849 91.60 6.6361	0.9854 91.65 6.6398	0.9865 91.75 6.6471	0.9876 91.85 6.6544	0.9886 91.95 6.6616	0.9897 92.05 6.6687	0.9907 92.14 6.6757	0.9918 92.24 6.6827	0.9928 92.33 6.6897
80.3 144.54 20.483			0.9832 91.44 6.6247	0.9837 91.49 6.6285	0.9843 91.54 6.6322	0.9848 91.59 6.6359	0.9859 91.69 6.6432	0.9870 91.79 6.6505	0.9881 91.89 6.6577	0.9891 91.99 6.6649	0.9902 92.09 6.6719	0.9912 92.19 6.6789	0.9923 92.28 6.6859
80.4 144.72 20.706			0.9826 91.38 6.6208	0.9831 91.44 6.6245	0.9837 91.49 6.6282	0.9842 91.54 6.6320	0.9853 91.64 6.6393	0.9864 91.74 6.6466	0.9875 91.84 6.6539	0.9886 91.94 6.6610	0.9896 92.04 6.6681	0.9907 92.13 6.6752	0.9917 92.23 6.6821
80.5 144.90 20.932			0.9820 91.33 6.6168	0.9826 91.38 6.6206	0.9831 91.43 6.6243	0.9837 91.48 6.6280	0.9848 91.59 6.6354	0.9858 91.69 6.6427	0.9869 91.79 6.6500	0.9880 91.89 6.6572	0.9891 91.99 6.6643	0.9901 92.08 6.6714	0.9911 92.18 6.6784
80.6 145.08 21.159			0.9814 91.27 6.6128	0.9820 91.33 6.6166	0.9825 91.38 6.6203	0.9831 91.43 6.6241	0.9842 91.53 6.6315	0.9853 91.63 6.6389	0.9864 91.73 6.6461	0.9874 91.83 6.6534	0.9885 91.93 6.6605	0.9895 92.03 6.6676	0.9906 92.13 6.6746
80.7 145.26 21.388			0.9808 91.22 6.6088	0.9814 91.27 6.6126	0.9819 91.32 6.6164	0.9825 91.38 6.6201	0.9836 91.48 6.6276	0.9847 91.58 6.6350	0.9858 91.68 6.6423	0.9869 91.78 6.6495	0.9879 91.88 6.6567	0.9890 91.98 6.6638	0.9900 92.08 6.6709
80.8 145.44 21.619			0.9802 91.16 6.6048	0.9808 91.22 6.6086	0.9813 91.27 6.6124	0.9819 91.32 6.6162	0.9830 91.42 6.6237	0.9841 91.53 6.6311	0.9852 91.63 6.6384	0.9863 91.73 6.6457	0.9874 91.83 6.6529	0.9884 91.93 6.6600	0.9895 92.02 6.6671
80.9 145.62 21.851			0.9796 91.11 6.6009	0.9802 91.16 6.6047	0.9808 91.21 6.6085	0.9813 91.27 6.6122	0.9824 91.37 6.6197	0.9835 91.47 6.6272	0.9846 91.57 6.6345	0.9857 91.67 6.6418	0.9868 91.77 6.6491	0.9878 91.87 6.6562	0.9889 91.97 6.6633

TABLE 8 - CONTINUED

DENSITY OF COMPRESSED LIQUID NITROGEN - CONTINUED

1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA			TABLE ENTRIES											
			1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL											
PSIA	12.000	14.696	25.000	50.000	75.000	100.000	150.000	200.000	250.000	300.000	350.000	400.000	450.000	
ATM.	0.817	1.000	1.701	3.402	5.103	6.805	10.207	13.609	17.011	20.414	23.816	27.218	30.621	
81.0 145.80 22.086			0.9790 91.05 6.5969	0.9796 91.11 6.6007	0.9802 91.16 6.6045	0.9807 91.21 6.6083	0.9819 91.32 6.6159	0.9830 91.42 6.6237	0.9841 91.52 6.6307	0.9851 91.62 6.6380	0.9862 91.72 6.6452	0.9873 91.82 6.6524	0.9883 91.92 6.6595	
81.1 145.98 22.323			0.9784 91.00 6.5929	0.9790 91.05 6.5967	0.9796 91.10 6.6005	0.9801 91.16 6.6043	0.9813 91.26 6.6119	0.9824 91.36 6.6194	0.9835 91.47 6.6269	0.9846 91.57 6.6341	0.9856 91.67 6.6414	0.9867 91.77 6.6486	0.9878 91.87 6.6558	
81.2 146.16 22.561			0.9779 90.94 6.5889	0.9784 91.00 6.5927	0.9790 91.05 6.5966	0.9796 91.10 6.6004	0.9807 91.21 6.6080	0.9818 91.31 6.6155	0.9829 91.41 6.6229	0.9840 91.52 6.6303	0.9851 91.62 6.6376	0.9862 91.72 6.6448	0.9872 91.81 6.6520	
81.3 146.34 22.801			0.9773 90.89 6.5848	0.9778 90.94 6.5892	0.9784 90.99 6.5936	0.9790 91.05 6.5980	0.9801 91.15 6.6054	0.9812 91.26 6.6129	0.9823 91.36 6.6203	0.9834 91.46 6.6276	0.9845 91.56 6.6350	0.9856 91.66 6.6424	0.9867 91.76 6.6498	
81.4 146.52 23.044			0.9767 90.83 6.5808	0.9772 90.89 6.5847	0.9778 90.94 6.5886	0.9784 90.99 6.5924	0.9795 91.10 6.6001	0.9806 91.20 6.6076	0.9817 91.31 6.6151	0.9829 91.41 6.6225	0.9839 91.51 6.6299	0.9850 91.61 6.6372	0.9861 91.71 6.6444	
81.5 146.70 23.288			0.9761 90.78 6.5768	0.9766 90.83 6.5807	0.9772 90.88 6.5846	0.9778 90.94 6.5885	0.9789 91.04 6.5961	0.9801 91.15 6.6037	0.9812 91.25 6.6112	0.9823 91.36 6.6187	0.9834 91.46 6.6261	0.9845 91.56 6.6335	0.9855 91.66 6.6409	
81.6 146.88 23.534			0.9755 90.72 6.5728	0.9760 90.78 6.5767	0.9766 90.83 6.5806	0.9772 90.88 6.5845	0.9783 90.99 6.5922	0.9795 91.09 6.5998	0.9806 91.20 6.6073	0.9817 91.30 6.6148	0.9828 91.40 6.6222	0.9839 91.51 6.6296	0.9850 91.61 6.6368	
81.7 147.06 23.782			0.9749 90.67 6.5688	0.9755 90.72 6.5727	0.9760 90.77 6.5766	0.9766 90.83 6.5805	0.9777 90.93 6.5882	0.9789 91.04 6.5959	0.9800 91.14 6.6034	0.9811 91.25 6.6109	0.9822 91.35 6.6184	0.9833 91.45 6.6257	0.9844 91.55 6.6330	
81.8 147.24 24.032			0.9743 90.61 6.5647	0.9749 90.67 6.5687	0.9754 90.72 6.5726	0.9760 90.77 6.5765	0.9772 90.88 6.5843	0.9783 90.99 6.5919	0.9794 91.09 6.5995	0.9806 91.19 6.6071	0.9817 91.30 6.6145	0.9828 91.40 6.6219	0.9838 91.50 6.6292	
81.9 147.42 24.284			0.9737 90.55 6.5607	0.9743 90.61 6.5647	0.9748 90.66 6.5686	0.9754 90.72 6.5725	0.9766 90.83 6.5803	0.9777 90.93 6.5880	0.9789 91.04 6.5956	0.9800 91.14 6.6032	0.9811 91.24 6.6107	0.9822 91.35 6.6181	0.9833 91.45 6.6254	
82.0 147.60 24.538			0.9731 90.50 6.5567	0.9737 90.55 6.5606	0.9743 90.61 6.5646	0.9748 90.66 6.5685	0.9760 90.77 6.5763	0.9771 90.88 6.5841	0.9783 90.99 6.5917	0.9794 91.09 6.5993	0.9806 91.19 6.6068	0.9816 91.29 6.6142	0.9827 91.40 6.6216	
82.1 147.78 24.794			0.9725 90.44 6.5526	0.9731 90.50 6.5566	0.9737 90.55 6.5606	0.9742 90.61 6.5645	0.9754 90.72 6.5724	0.9766 90.82 6.5801	0.9777 90.93 6.5878	0.9788 91.03 6.5954	0.9799 91.14 6.6029	0.9810 91.24 6.6104	0.9821 91.34 6.6178	
82.2 147.96 25.052				0.9725 90.44 6.5526	0.9731 90.50 6.5566	0.9736 90.55 6.5605	0.9748 90.66 6.5684	0.9760 90.77 6.5762	0.9771 90.87 6.5839	0.9782 90.98 6.5915	0.9794 91.08 6.5991	0.9805 91.19 6.6066	0.9816 91.29 6.6140	
82.3 148.14 25.312				0.9719 90.39 6.5485	0.9725 90.44 6.5525	0.9731 90.50 6.5565	0.9742 90.61 6.5644	0.9754 90.71 6.5722	0.9765 90.82 6.5800	0.9777 90.93 6.5876	0.9788 91.03 6.5952	0.9799 91.13 6.6027	0.9810 91.24 6.6101	
82.4 148.32 25.574				0.9713 90.33 6.5445	0.9719 90.39 6.5485	0.9725 90.44 6.5525	0.9736 90.55 6.5604	0.9748 90.66 6.5683	0.9759 90.77 6.5760	0.9771 90.87 6.5837	0.9782 90.98 6.5913	0.9793 91.08 6.5989	0.9804 91.18 6.6063	
82.5 148.50 25.838				0.9707 90.28 6.5405	0.9713 90.33 6.5445	0.9719 90.39 6.5485	0.9730 90.50 6.5564	0.9742 90.60 6.5642	0.9754 90.71 6.5721	0.9765 90.82 6.5798	0.9776 90.92 6.5874	0.9788 91.03 6.5950	0.9799 91.13 6.6025	
82.6 148.68 26.105				0.9701 90.22 6.5364	0.9707 90.28 6.5404	0.9713 90.33 6.5445	0.9724 90.44 6.5524	0.9736 90.55 6.5603	0.9748 90.66 6.5682	0.9759 90.76 6.5759	0.9771 90.87 6.5836	0.9782 90.98 6.5912	0.9793 91.08 6.5987	
82.7 148.86 26.373				0.9695 90.16 6.5324	0.9701 90.22 6.5364	0.9707 90.28 6.5404	0.9719 90.39 6.5483	0.9730 90.50 6.5564	0.9742 90.60 6.5642	0.9753 90.71 6.5720	0.9765 90.82 6.5797	0.9776 90.92 6.5873	0.9787 91.03 6.5948	
82.8 149.04 26.643				0.9689 90.11 6.5283	0.9695 90.16 6.5324	0.9701 90.22 6.5364	0.9713 90.33 6.5445	0.9724 90.44 6.5524	0.9736 90.55 6.5603	0.9748 90.66 6.5681	0.9759 90.76 6.5758	0.9770 90.87 6.5834	0.9782 90.97 6.5910	
82.9 149.22 26.915				0.9683 90.05 6.5242	0.9689 90.11 6.5283	0.9695 90.16 6.5324	0.9707 90.28 6.5405	0.9719 90.39 6.5484	0.9730 90.49 6.5563	0.9742 90.60 6.5642	0.9753 90.71 6.5719	0.9765 90.82 6.5796	0.9776 90.92 6.5872	

TABLE ENTRIES															
1. TEMPERATURE, K 2. TEMPERATURE, °R 3. VAPOR PRESSURE, PSIA				1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL											
PSIA	12.000	14.696	25.000	50.000	75.000	100.000	150.000	200.000	250.000	300.000	350.000	400.000	450.000		
ATM.	0.817	1.000	1.701	3.402	5.103	6.805	10.207	13.609	17.011	20.414	23.816	27.218	30.621		
83.0 149.40 27.190				0.9677 90.00 6.5202	0.9683 90.05 6.5243	0.9689 90.11 6.5283	0.9701 90.22 6.5364	0.9713 90.33 6.5445	0.9724 90.44 6.5524	0.9736 90.55 6.5602	0.9748 90.66 6.5680	0.9759 90.76 6.5757	0.9770 90.87 6.5833		
83.1 149.58 27.466				0.9671 89.94 6.5161	0.9677 90.00 6.5202	0.9683 90.05 6.5243	0.9695 90.16 6.5324	0.9707 90.28 6.5405	0.9719 90.39 6.5484	0.9730 90.49 6.5563	0.9742 90.60 6.5641	0.9753 90.71 6.5718	0.9765 90.81 6.5795		
83.2 149.76 27.745				0.9664 89.88 6.5120	0.9671 89.94 6.5161	0.9677 90.00 6.5203	0.9689 90.11 6.5284	0.9701 90.22 6.5365	0.9713 90.33 6.5445	0.9724 90.44 6.5524	0.9736 90.55 6.5602	0.9747 90.65 6.5680	0.9759 90.76 6.5756		
83.3 149.94 28.026				0.9658 89.83 6.5079	0.9665 89.88 6.5121	0.9671 89.94 6.5162	0.9683 90.05 6.5244	0.9695 90.17 6.5325	0.9707 90.28 6.5405	0.9719 90.39 6.5484	0.9730 90.49 6.5563	0.9742 90.60 6.5641	0.9753 90.71 6.5718		
83.4 150.12 28.308				0.9652 89.77 6.5038	0.9659 89.83 6.5080	0.9665 89.88 6.5121	0.9677 90.00 6.5204	0.9689 90.11 6.5285	0.9701 90.22 6.5365	0.9713 90.33 6.5445	0.9724 90.44 6.5524	0.9736 90.55 6.5602	0.9747 90.65 6.5679		
83.5 150.30 28.593				0.9646 89.71 6.4997	0.9652 89.77 6.5039	0.9659 89.83 6.5081	0.9671 89.94 6.5163	0.9683 90.06 6.5245	0.9695 90.17 6.5326	0.9707 90.28 6.5406	0.9719 90.39 6.5485	0.9730 90.49 6.5563	0.9742 90.60 6.5641		
83.6 150.48 28.880				0.9640 89.66 6.4956	0.9646 89.71 6.4998	0.9653 89.77 6.5040	0.9665 89.89 6.5123	0.9677 90.00 6.5205	0.9689 90.11 6.5286	0.9701 90.22 6.5366	0.9713 90.33 6.5446	0.9724 90.44 6.5524	0.9736 90.55 6.5602		
83.7 150.66 29.170				0.9634 89.60 6.4915	0.9640 89.66 6.4958	0.9647 89.72 6.5000	0.9659 89.83 6.5083	0.9671 89.94 6.5165	0.9683 90.06 6.5246	0.9695 90.17 6.5327	0.9707 90.28 6.5406	0.9719 90.39 6.5485	0.9730 90.49 6.5563		
83.8 150.84 29.461				0.9628 89.54 6.4874	0.9634 89.60 6.4917	0.9641 89.66 6.4959	0.9653 89.78 6.5042	0.9665 89.89 6.5125	0.9677 90.00 6.5206	0.9689 90.11 6.5287	0.9701 90.22 6.5367	0.9713 90.33 6.5446	0.9724 90.44 6.5525		
83.9 151.02 29.755				0.9622 89.49 6.4833	0.9628 89.55 6.4876	0.9634 89.60 6.4918	0.9647 89.72 6.5002	0.9659 89.83 6.5085	0.9671 89.95 6.5167	0.9683 90.06 6.5248	0.9695 90.17 6.5328	0.9707 90.28 6.5407	0.9719 90.39 6.5486		
84.0 151.20 30.050				0.9616 89.43 6.4792	0.9622 89.49 6.4835	0.9628 89.55 6.4877	0.9641 89.66 6.4961	0.9653 89.78 6.5044	0.9665 89.89 6.5127	0.9678 90.00 6.5208	0.9689 90.12 6.5288	0.9701 90.23 6.5368	0.9713 90.33 6.5447		
84.1 151.38 30.348				0.9610 89.37 6.4751	0.9616 89.43 6.4794	0.9622 89.49 6.4836	0.9635 89.61 6.4921	0.9647 89.72 6.5004	0.9660 89.84 6.5087	0.9672 89.95 6.5168	0.9684 90.06 6.5249	0.9695 90.17 6.5329	0.9707 90.28 6.5408		
84.2 151.56 30.649				0.9604 89.32 6.4710	0.9610 89.38 6.4753	0.9616 89.43 6.4795	0.9629 89.55 6.4880	0.9641 89.67 6.4964	0.9654 89.78 6.5047	0.9666 89.89 6.5129	0.9678 90.01 6.5210	0.9690 90.12 6.5290	0.9701 90.23 6.5369		
84.3 151.74 30.951				0.9597 89.26 6.4668	0.9604 89.32 6.4712	0.9610 89.38 6.4754	0.9623 89.50 6.4839	0.9635 89.61 6.4924	0.9648 89.73 6.5007	0.9660 89.84 6.5089	0.9672 89.95 6.5170	0.9684 90.06 6.5251	0.9696 90.17 6.5330		
84.4 151.92 31.256				0.9591 89.20 6.4627	0.9598 89.26 6.4670	0.9604 89.32 6.4713	0.9617 89.44 6.4799	0.9629 89.56 6.4883	0.9642 89.67 6.4967	0.9654 89.78 6.5049	0.9666 89.90 6.5131	0.9678 90.01 6.5212	0.9690 90.12 6.5292		
84.5 152.10 31.562				0.9585 89.15 6.4586	0.9592 89.21 6.4629	0.9598 89.26 6.4672	0.9611 89.38 6.4753	0.9623 89.50 6.4834	0.9636 89.62 6.4926	0.9648 89.73 6.5009	0.9660 89.84 6.5091	0.9672 89.95 6.5172	0.9684 90.07 6.5253		
84.6 152.28 31.871				0.9579 89.09 6.4544	0.9585 89.15 6.4593	0.9592 89.21 6.4631	0.9605 89.33 6.4717	0.9617 89.44 6.4802	0.9630 89.56 6.4886	0.9642 89.67 6.4969	0.9654 89.79 6.5052	0.9666 89.90 6.5133	0.9678 90.01 6.5214		
84.7 152.46 32.183				0.9573 89.03 6.4503	0.9579 89.09 6.4547	0.9586 89.15 6.4590	0.9599 89.27 6.4676	0.9611 89.39 6.4762	0.9624 89.50 6.4846	0.9636 89.62 6.4930	0.9648 89.73 6.5012	0.9661 89.85 6.5094	0.9673 89.96 6.5175		
84.8 152.64 32.496				0.9567 88.97 6.4461	0.9573 89.03 6.4505	0.9580 89.09 6.4549	0.9593 89.21 6.4636	0.9605 89.32 6.4721	0.9618 89.45 6.4806	0.9630 89.56 6.4890	0.9643 89.68 6.4972	0.9655 89.79 6.5054	0.9667 89.90 6.5135		
84.9 152.82 32.812				0.9560 88.92 6.4420	0.9567 88.98 6.4464	0.9574 89.04 6.4508	0.9586 89.16 6.4595	0.9599 89.28 6.4681	0.9612 89.39 6.4766	0.9624 89.51 6.4850	0.9637 89.62 6.4933	0.9649 89.74 6.5015	0.9661 89.85 6.5096		

1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA		TABLE ENTRIES 1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL											
PSIA ATM.	12.000 0.817	14.696 1.000	25.000 1.701	50.000 3.402	75.000 5.133	100.000 6.805	150.000 10.207	200.000 13.609	250.000 17.011	300.000 20.414	350.000 23.816	400.000 27.218	450.000 30.621
85.0 153.00 33.130				0.9554 88.86 6.4378	0.9561 88.92 6.4422	0.9567 88.98 6.4466	0.9580 89.10 6.4554	0.9593 89.22 6.4640	0.9606 89.34 6.4725	0.9618 89.45 6.4810	0.9631 89.57 6.4893	0.9643 89.68 6.4976	0.9655 89.80 6.5057
85.1 153.18 33.451				0.9548 88.80 6.4336	0.9555 88.86 6.4381	0.9561 88.92 6.4425	0.9574 89.04 6.4513	0.9587 89.16 6.4599	0.9600 89.28 6.4685	0.9612 89.40 6.4770	0.9625 89.51 6.4853	0.9637 89.63 6.4936	0.9649 89.74 6.5018
85.2 153.36 33.774				0.9542 88.74 6.4294	0.9549 88.80 6.4339	0.9555 88.87 6.4384	0.9568 88.99 6.4472	0.9581 89.11 6.4559	0.9594 89.23 6.4644	0.9606 89.34 6.4729	0.9619 89.46 6.4814	0.9631 89.57 6.4897	0.9644 89.69 6.4979
85.3 153.54 34.099				0.9536 88.69 6.4253	0.9542 88.75 6.4298	0.9549 88.81 6.4342	0.9562 88.93 6.4430	0.9575 89.05 6.4518	0.9588 89.17 6.4604	0.9601 89.29 6.4689	0.9613 89.40 6.4774	0.9625 89.52 6.4857	0.9638 89.63 6.4940
85.4 153.72 34.426				0.9530 88.63 6.4211	0.9536 88.69 6.4256	0.9543 88.75 6.4301	0.9556 88.87 6.4389	0.9569 89.00 6.4477	0.9582 89.11 6.4564	0.9595 89.23 6.4649	0.9607 89.35 6.4734	0.9620 89.47 6.4818	0.9632 89.58 6.4900
85.5 153.90 34.756				0.9523 88.57 6.4169	0.9530 88.63 6.4214	0.9537 88.69 6.4259	0.9550 88.82 6.4348	0.9563 88.94 6.4436	0.9576 89.06 6.4523	0.9589 89.18 6.4609	0.9601 89.29 6.4694	0.9614 89.41 6.4778	0.9626 89.53 6.4861
85.6 154.08 35.088				0.9517 88.51 6.4127	0.9524 88.57 6.4172	0.9530 88.64 6.4217	0.9544 88.76 6.4307	0.9557 88.88 6.4395	0.9570 89.00 6.4482	0.9583 89.12 6.4569	0.9595 89.24 6.4654	0.9608 89.36 6.4738	0.9620 89.47 6.4822
85.7 154.26 35.422				0.9511 88.45 6.4085	0.9518 88.52 6.4131	0.9524 88.58 6.4176	0.9538 88.70 6.4266	0.9551 88.83 6.4354	0.9564 88.95 6.4442	0.9577 89.07 6.4528	0.9589 89.18 6.4614	0.9602 89.30 6.4699	0.9614 89.42 6.4782
85.8 154.44 35.759				0.9505 88.40 6.4043	0.9511 88.46 6.4089	0.9518 88.52 6.4134	0.9531 88.65 6.4224	0.9545 88.77 6.4313	0.9558 88.89 6.4401	0.9571 89.01 6.4488	0.9583 89.13 6.4574	0.9596 89.25 6.4659	0.9608 89.36 6.4743
85.9 154.62 36.098				0.9498 88.34 6.4001	0.9505 88.40 6.4047	0.9512 88.46 6.4092	0.9525 88.59 6.4183	0.9539 88.71 6.4272	0.9552 88.83 6.4360	0.9565 88.95 6.4448	0.9577 89.07 6.4534	0.9590 89.19 6.4619	0.9603 89.31 6.4703
86.0 154.80 36.440				0.9492 88.28 6.3959	0.9499 88.34 6.4005	0.9506 88.41 6.4051	0.9519 88.53 6.4141	0.9533 88.66 6.4231	0.9546 88.78 6.4320	0.9559 88.90 6.4407	0.9572 89.02 6.4494	0.9584 89.14 6.4579	0.9597 89.25 6.4664
86.1 154.98 36.784				0.9486 88.22 6.3916	0.9493 88.29 6.3963	0.9500 88.35 6.4009	0.9513 88.47 6.4100	0.9526 88.60 6.4190	0.9540 88.72 6.4279	0.9553 88.84 6.4367	0.9566 88.96 6.4454	0.9578 89.08 6.4539	0.9591 89.20 6.4624
86.2 155.16 37.130				0.9480 88.16 6.3874	0.9486 88.23 6.3921	0.9493 88.29 6.3967	0.9507 88.42 6.4058	0.9520 88.54 6.4149	0.9534 88.67 6.4238	0.9547 88.79 6.4326	0.9560 88.91 6.4413	0.9572 89.03 6.4500	0.9585 89.14 6.4585
86.3 155.34 37.479				0.9473 88.10 6.3832	0.9480 88.17 6.3878	0.9487 88.23 6.3925	0.9501 88.36 6.4017	0.9514 88.49 6.4107	0.9527 88.61 6.4197	0.9541 88.73 6.4286	0.9554 88.85 6.4373	0.9566 88.97 6.4460	0.9579 89.09 6.4545
86.4 155.52 37.830				0.9467 88.05 6.3789	0.9474 88.11 6.3836	0.9481 88.18 6.3883	0.9495 88.30 6.3975	0.9508 88.43 6.4066	0.9521 88.55 6.4156	0.9535 88.67 6.4245	0.9548 88.80 6.4333	0.9561 88.92 6.4420	0.9573 89.03 6.4505
86.5 155.70 38.184				0.9461 87.99 6.3747	0.9468 88.05 6.3794	0.9475 88.12 6.3841	0.9488 88.24 6.3933	0.9502 88.37 6.4025	0.9515 88.50 6.4115	0.9529 88.62 6.4204	0.9542 88.74 6.4292	0.9555 88.86 6.4380	0.9567 88.98 6.4466
86.6 155.88 38.540				0.9454 87.93 6.3704	0.9461 87.99 6.3752	0.9468 88.06 6.3799	0.9482 88.19 6.3892	0.9496 88.31 6.3983	0.9509 88.44 6.4074	0.9523 88.56 6.4164	0.9536 88.68 6.4252	0.9549 88.81 6.4340	0.9561 88.92 6.4426
86.7 156.06 38.898				0.9448 87.87 6.3662	0.9455 87.94 6.3709	0.9462 88.00 6.3756	0.9476 88.13 6.3850	0.9490 88.26 6.3942	0.9503 88.39 6.4033	0.9516 88.51 6.4123	0.9530 88.63 6.4212	0.9543 88.75 6.4299	0.9556 88.87 6.4386
86.8 156.24 39.259				0.9442 87.81 6.3619	0.9449 87.88 6.3667	0.9456 87.94 6.3714	0.9471 88.07 6.3809	0.9485 88.20 6.3900	0.9497 88.33 6.3992	0.9510 88.45 6.4082	0.9524 88.57 6.4171	0.9537 88.69 6.4259	0.9550 88.81 6.4346
86.9 156.42 39.623				0.9435 87.75 6.3577	0.9442 87.82 6.3624	0.9450 87.88 6.3672	0.9465 88.01 6.3766	0.9477 88.14 6.3859	0.9491 88.27 6.3951	0.9504 88.39 6.4041	0.9518 88.52 6.4131	0.9531 88.64 6.4219	0.9544 88.76 6.4307

1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA				TABLE ENTRIES										
				1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL										
PSIA	12.000	14.696	25.000	50.000	75.000	100.000	150.000	200.000	250.000	300.000	350.000	400.000	450.000	
ATM.	0.817	1.000	1.701	3.402	5.103	6.805	10.207	13.609	17.011	20.414	23.816	27.218	30.621	
87.0 156.60 39.989				0.9429 87.69 6.3534	0.9436 87.76 6.3582	0.9443 87.83 6.3630	0.9457 87.96 6.3724	0.9471 88.08 6.3817	0.9485 88.21 6.3909	0.9498 88.34 6.4000	0.9512 88.46 6.4090	0.9525 88.58 6.4179	0.9538 88.70 6.4267	
87.1 156.78 40.357				0.9423 87.63 6.3491	0.9430 87.70 6.3539	0.9437 87.77 6.3587	0.9451 87.90 6.3682	0.9465 88.03 6.3776	0.9479 88.15 6.3868	0.9492 88.28 6.3959	0.9506 88.41 6.4050	0.9519 88.53 6.4139	0.9532 88.65 6.4227	
87.2 156.96 40.728				0.9416 87.58 6.3448	0.9424 87.64 6.3497	0.9431 87.71 6.3545	0.9445 87.84 6.3640	0.9459 87.97 6.3734	0.9473 88.10 6.3827	0.9486 88.22 6.3918	0.9500 88.35 6.4009	0.9513 88.47 6.4098	0.9526 88.59 6.4187	
87.3 157.14 41.102				0.9410 87.52 6.3405	0.9417 87.58 6.3454	0.9424 87.65 6.3502	0.9439 87.78 6.3598	0.9453 87.91 6.3692	0.9466 88.04 6.3785	0.9480 88.17 6.3877	0.9494 88.29 6.3968	0.9507 88.42 6.4058	0.9520 88.54 6.4147	
87.4 157.32 41.478				0.9404 87.46 6.3363	0.9411 87.52 6.3411	0.9418 87.59 6.3460	0.9432 87.72 6.3556	0.9446 87.85 6.3651	0.9460 87.98 6.3744	0.9474 88.11 6.3836	0.9487 88.24 6.3928	0.9501 88.36 6.4018	0.9514 88.48 6.4107	
87.5 157.50 41.856				0.9397 87.40 6.3320	0.9405 87.47 6.3369	0.9412 87.53 6.3417	0.9426 87.67 6.3514	0.9440 87.80 6.3609	0.9454 87.93 6.3703	0.9468 88.05 6.3795	0.9481 88.18 6.3887	0.9495 88.31 6.3977	0.9508 88.43 6.4067	
87.6 157.68 42.237				0.9391 87.34 6.3277	0.9398 87.41 6.3326	0.9405 87.47 6.3375	0.9420 87.61 6.3471	0.9434 87.74 6.3567	0.9448 87.87 6.3661	0.9462 88.00 6.3754	0.9475 88.12 6.3846	0.9489 88.25 6.3937	0.9502 88.37 6.4026	
87.7 157.86 42.621				0.9384 87.28 6.3233	0.9392 87.35 6.3283	0.9399 87.41 6.3332	0.9413 87.55 6.3429	0.9428 87.68 6.3525	0.9442 87.81 6.3619	0.9456 87.94 6.3713	0.9469 88.07 6.3805	0.9483 88.19 6.3896	0.9496 88.32 6.3986	
87.8 158.04 43.007				0.9378 87.22 6.3190	0.9385 87.29 6.3240	0.9393 87.36 6.3289	0.9407 87.49 6.3387	0.9421 87.62 6.3483	0.9436 87.75 6.3578	0.9449 87.88 6.3672	0.9463 88.01 6.3764	0.9477 88.14 6.3856	0.9490 88.26 6.3946	
87.9 158.22 43.396				0.9372 87.16 6.3147	0.9379 87.23 6.3197	0.9386 87.30 6.3246	0.9401 87.43 6.3344	0.9415 87.57 6.3441	0.9429 87.70 6.3536	0.9443 87.83 6.3630	0.9457 87.95 6.3723	0.9471 88.08 6.3815	0.9484 88.21 6.3906	
88.0 158.40 43.788				0.9365 87.10 6.3104	0.9373 87.17 6.3154	0.9380 87.24 6.3203	0.9395 87.37 6.3302	0.9409 87.51 6.3399	0.9423 87.64 6.3494	0.9437 87.77 6.3589	0.9451 87.90 6.3682	0.9465 88.03 6.3774	0.9478 88.15 6.3865	
88.1 158.58 44.182				0.9359 87.04 6.3060	0.9366 87.11 6.3111	0.9374 87.18 6.3160	0.9388 87.31 6.3259	0.9403 87.45 6.3357	0.9417 87.58 6.3453	0.9431 87.71 6.3548	0.9445 87.84 6.3641	0.9459 87.97 6.3734	0.9472 88.10 6.3825	
88.2 158.76 44.579				0.9352 86.98 6.3017	0.9360 87.05 6.3067	0.9367 87.12 6.3117	0.9382 87.26 6.3217	0.9396 87.39 6.3314	0.9411 87.52 6.3411	0.9425 87.66 6.3506	0.9439 87.78 6.3600	0.9453 87.91 6.3693	0.9466 88.04 6.3785	
88.3 158.94 44.978				0.9346 86.92 6.2973	0.9353 86.99 6.3024	0.9361 87.06 6.3074	0.9376 87.20 6.3174	0.9390 87.33 6.3272	0.9405 87.47 6.3369	0.9419 87.60 6.3465	0.9433 87.73 6.3559	0.9447 87.86 6.3652	0.9460 87.98 6.3744	
88.4 159.12 45.380				0.9339 86.86 6.2930	0.9347 86.93 6.2981	0.9354 87.00 6.3031	0.9369 87.14 6.3131	0.9384 87.27 6.3230	0.9398 87.41 6.3327	0.9413 87.54 6.3423	0.9427 87.67 6.3518	0.9441 87.80 6.3611	0.9454 87.93 6.3704	
88.5 159.30 45.784				0.9333 86.80 6.2886	0.9341 86.87 6.2937	0.9348 86.94 6.2988	0.9363 87.08 6.3089	0.9378 87.22 6.3188	0.9392 87.35 6.3285	0.9406 87.48 6.3382	0.9421 87.61 6.3477	0.9434 87.74 6.3570	0.9448 87.87 6.3663	
88.6 159.48 46.192				0.9326 86.74 6.2843	0.9334 86.81 6.2894	0.9342 86.88 6.2945	0.9357 87.02 6.3046	0.9371 87.16 6.3145	0.9386 87.29 6.3243	0.9400 87.43 6.3340	0.9414 87.56 6.3435	0.9428 87.69 6.3530	0.9442 87.82 6.3623	
88.7 159.66 46.602				0.9320 86.68 6.2799	0.9328 86.75 6.2850	0.9335 86.82 6.2902	0.9350 86.96 6.3003	0.9365 87.10 6.3102	0.9380 87.23 6.3201	0.9394 87.37 6.3298	0.9408 87.50 6.3394	0.9422 87.63 6.3489	0.9436 87.76 6.3582	
88.8 159.84 47.014				0.9313 86.62 6.2755	0.9321 86.69 6.2807	0.9329 86.76 6.2858	0.9344 86.90 6.2960	0.9359 87.04 6.3060	0.9373 87.18 6.3159	0.9388 87.31 6.3256	0.9402 87.44 6.3353	0.9416 87.57 6.3448	0.9430 87.70 6.3541	
88.9 160.02 47.430				0.9307 86.56 6.2711	0.9315 86.63 6.2763	0.9322 86.70 6.2815	0.9337 86.84 6.2917	0.9352 86.98 6.3018	0.9367 87.12 6.3117	0.9382 87.25 6.3215	0.9396 87.39 6.3311	0.9410 87.52 6.3407	0.9424 87.65 6.3501	

1. TEMPERATURE, K 2. TEMPERATURE, °F 3. VAPOR PRESSURE, PSIA			TABLE ENTRIES											
			1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL											
PSIA	12.000	14.696	25.000	50.000	75.000	100.000	150.000	200.000	250.000	300.000	350.000	400.000	450.000	
ATM.	0.817	1.000	1.701	3.402	5.103	6.805	10.207	13.609	17.011	20.414	23.816	27.218	30.621	
89.0 160.20 47.848				0.9300 86.50 6.2667	0.9308 86.57 6.2720	0.9316 86.64 6.2771	0.9331 86.78 6.2874	0.9346 86.92 6.2975	0.9361 87.06 6.3075	0.9375 87.20 6.3173	0.9390 87.33 6.3270	0.9404 87.46 6.3365	0.9418 87.59 6.3469	
89.1 160.38 48.268				0.9294 86.44 6.2623	0.9302 86.51 6.2676	0.9309 86.58 6.2728	0.9325 86.72 6.2831	0.9340 86.86 6.2932	0.9355 87.00 6.3032	0.9369 87.14 6.3131	0.9384 87.27 6.3228	0.9398 87.40 6.3324	0.9412 87.54 6.3419	
89.2 160.56 48.692				0.9287 86.38 6.2579	0.9295 86.45 6.2632	0.9303 86.52 6.2684	0.9318 86.66 6.2788	0.9333 86.80 6.2890	0.9348 86.94 6.2990	0.9363 87.08 6.3089	0.9378 87.21 6.3187	0.9392 87.35 6.3283	0.9406 87.48 6.3378	
89.3 160.74 49.118				0.9281 86.32 6.2535	0.9289 86.39 6.2588	0.9296 86.46 6.2641	0.9312 86.60 6.2744	0.9327 86.74 6.2847	0.9342 86.88 6.2948	0.9357 87.02 6.3047	0.9371 87.16 6.3145	0.9386 87.29 6.3242	0.9400 87.42 6.3337	
89.4 160.92 49.547				0.9274 86.25 6.2491	0.9282 86.33 6.2544	0.9290 86.40 6.2597	0.9305 86.54 6.2701	0.9321 86.69 6.2804	0.9336 86.83 6.2905	0.9351 86.96 6.3005	0.9365 87.10 6.3103	0.9380 87.23 6.3201	0.9394 87.37 6.3296	
89.5 161.10 49.979				0.9268 86.19 6.2447	0.9276 86.27 6.2500	0.9284 86.34 6.2553	0.9299 86.48 6.2659	0.9314 86.63 6.2761	0.9329 86.77 6.2863	0.9344 86.91 6.2963	0.9359 87.04 6.3062	0.9373 87.18 6.3159	0.9388 87.31 6.3256	
89.6 161.28 50.413					0.9269 86.21 6.2456	0.9277 86.28 6.2509	0.9293 86.42 6.2614	0.9308 86.57 6.2718	0.9323 86.71 6.2820	0.9338 86.85 6.2921	0.9353 86.98 6.3020	0.9367 87.12 6.3118	0.9382 87.25 6.3215	
89.7 161.46 50.850					0.9263 86.15 6.2412	0.9270 86.22 6.2465	0.9286 86.36 6.2571	0.9302 86.51 6.2675	0.9317 86.65 6.2777	0.9332 86.79 6.2879	0.9347 86.93 6.2978	0.9361 87.06 6.3076	0.9376 87.20 6.3173	
89.8 161.64 51.290					0.9256 86.08 6.2368	0.9264 86.16 6.2422	0.9280 86.30 6.2528	0.9295 86.45 6.2632	0.9310 86.59 6.2735	0.9326 86.73 6.2836	0.9340 86.87 6.2936	0.9355 87.00 6.3035	0.9369 87.14 6.3132	
89.9 161.82 51.733					0.9249 86.02 6.2324	0.9257 86.10 6.2377	0.9273 86.24 6.2484	0.9289 86.39 6.2589	0.9304 86.53 6.2692	0.9319 86.67 6.2794	0.9334 86.81 6.2894	0.9349 86.95 6.2993	0.9363 87.08 6.3091	
90.0 162.00 52.179					0.9243 85.96 6.2279	0.9251 86.04 6.2333	0.9267 86.18 6.2440	0.9282 86.33 6.2546	0.9298 86.47 6.2649	0.9313 86.61 6.2752	0.9328 86.75 6.2852	0.9343 86.89 6.2952	0.9357 87.03 6.3050	
90.1 162.18 52.627					0.9236 85.90 6.2235	0.9244 85.98 6.2289	0.9260 86.12 6.2397	0.9276 86.27 6.2502	0.9291 86.41 6.2607	0.9307 86.56 6.2709	0.9322 86.69 6.2810	0.9337 86.83 6.2910	0.9351 86.97 6.3009	
90.2 162.36 53.078					0.9230 85.84 6.2190	0.9238 85.91 6.2245	0.9254 86.06 6.2353	0.9270 86.21 6.2459	0.9285 86.35 6.2564	0.9300 86.50 6.2667	0.9315 86.64 6.2768	0.9330 86.78 6.2869	0.9345 86.91 6.2967	
90.3 162.54 53.533					0.9223 85.78 6.2146	0.9231 85.85 6.2201	0.9247 86.00 6.2309	0.9263 86.15 6.2416	0.9279 86.29 6.2521	0.9294 86.44 6.2624	0.9309 86.58 6.2726	0.9324 86.72 6.2827	0.9339 86.85 6.2926	
90.4 162.72 53.990					0.9216 85.72 6.2101	0.9225 85.79 6.2156	0.9241 85.94 6.2265	0.9257 86.09 6.2372	0.9272 86.24 6.2478	0.9288 86.38 6.2582	0.9303 86.52 6.2684	0.9318 86.66 6.2785	0.9333 86.80 6.2885	
90.5 162.90 54.449					0.9210 85.65 6.2057	0.9218 85.73 6.2112	0.9234 85.88 6.2221	0.9250 86.03 6.2329	0.9266 86.18 6.2435	0.9281 86.32 6.2539	0.9297 86.46 6.2642	0.9312 86.60 6.2743	0.9327 86.74 6.2843	
90.6 163.08 54.912					0.9203 85.59 6.2012	0.9211 85.67 6.2068	0.9228 85.82 6.2177	0.9244 85.97 6.2285	0.9260 86.12 6.2392	0.9275 86.26 6.2496	0.9290 86.40 6.2600	0.9306 86.54 6.2701	0.9320 86.68 6.2802	
90.7 163.26 55.378					0.9197 85.53 6.1967	0.9205 85.61 6.2023	0.9221 85.76 6.2133	0.9237 85.91 6.2242	0.9253 86.06 6.2349	0.9269 86.20 6.2454	0.9284 86.35 6.2557	0.9299 86.49 6.2660	0.9314 86.63 6.2760	
90.8 163.44 55.846					0.9190 85.47 6.1922	0.9198 85.55 6.1978	0.9215 85.70 6.2089	0.9231 85.85 6.2198	0.9247 86.00 6.2305	0.9262 86.14 6.2411	0.9278 86.29 6.2515	0.9293 86.43 6.2618	0.9308 86.57 6.2719	
90.9 163.62 56.318					0.9183 85.41 6.1877	0.9192 85.48 6.1934	0.9208 85.64 6.2045	0.9224 85.79 6.2154	0.9240 85.94 6.2262	0.9256 86.08 6.2368	0.9272 86.23 6.2473	0.9287 86.37 6.2576	0.9302 86.51 6.2677	

TABLE ENTRIES				TABLE ENTRIES										
1. TEMPERATURE, K 2. TEMPERATURE, P 3. VAPOR PRESSURE, PSIA				1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, L3/GAL										
PSIA ATM.	12.330 0.817	14.696 1.030	25.000 1.791	50.000 3.422	75.000 5.133	100.000 6.805	150.000 10.207	200.000 13.639	250.000 17.011	300.000 20.414	350.000 23.816	400.000 27.218	450.000 30.621	
91.0 163.80 56.792					0.9177 85.34 6.1832	0.9185 85.42 6.1889	0.9201 85.53 6.2001	0.9218 85.73 6.2110	0.9234 85.83 6.2219	0.9250 86.02 6.2325	0.9265 86.17 6.2430	0.9281 86.31 6.2533	0.9296 86.45 6.2635	
91.1 163.98 57.269					0.9173 85.28 6.1797	0.9178 85.36 6.1844	0.9195 85.52 6.1956	0.9211 85.67 6.2067	0.9227 85.82 6.2175	0.9243 85.97 6.2282	0.9259 86.11 6.2388	0.9274 86.25 6.2491	0.9290 86.40 6.2594	
91.2 164.16 57.749					0.9163 85.22 6.1742	0.9172 85.30 6.1799	0.9188 85.45 6.1912	0.9205 85.61 6.2023	0.9221 85.76 6.2132	0.9237 85.91 6.2239	0.9253 86.05 6.2345	0.9268 86.20 6.2449	0.9283 86.34 6.2552	
91.3 164.34 58.232					0.9156 85.16 6.1697	0.9165 85.24 6.1754	0.9182 85.39 6.1867	0.9198 85.55 6.1979	0.9214 85.70 6.2088	0.9231 85.85 6.2196	0.9246 85.99 6.2302	0.9262 86.14 6.2407	0.9277 86.28 6.2511	
91.4 164.52 58.718					0.9150 85.10 6.1652	0.9158 85.17 6.1709	0.9175 85.33 6.1823	0.9192 85.49 6.1935	0.9208 85.64 6.2045	0.9224 85.79 6.2153	0.9240 85.93 6.2260	0.9256 86.08 6.2365	0.9271 86.22 6.2468	
91.5 164.70 59.208					0.9143 85.03 6.1606	0.9152 85.11 6.1664	0.9168 85.27 6.1778	0.9185 85.43 6.1891	0.9202 85.58 6.2001	0.9218 85.73 6.2110	0.9234 85.88 6.2217	0.9249 86.02 6.2322	0.9265 86.16 6.2426	
91.6 164.88 59.700					0.9136 84.97 6.1561	0.9145 85.05 6.1619	0.9162 85.21 6.1734	0.9179 85.36 6.1846	0.9195 85.52 6.1957	0.9211 85.67 6.2066	0.9227 85.82 6.2174	0.9243 85.96 6.2280	0.9258 86.11 6.2384	
91.7 165.06 60.195					0.9129 84.91 6.1515	0.9138 84.99 6.1574	0.9155 85.15 6.1689	0.9172 85.30 6.1802	0.9189 85.46 6.1914	0.9205 85.61 6.2023	0.9221 85.76 6.2131	0.9237 85.90 6.2238	0.9252 86.05 6.2342	
91.8 165.24 60.693					0.9123 84.84 6.1470	0.9131 84.93 6.1528	0.9149 85.08 6.1644	0.9165 85.24 6.1758	0.9182 85.40 6.1870	0.9198 85.55 6.1980	0.9215 85.70 6.2088	0.9230 85.85 6.2195	0.9246 85.99 6.2300	
91.9 165.42 61.194					0.9116 84.78 6.1424	0.9125 84.86 6.1483	0.9142 85.02 6.1599	0.9159 85.18 6.1713	0.9176 85.34 6.1826	0.9192 85.49 6.1936	0.9208 85.64 6.2045	0.9224 85.79 6.2153	0.9240 85.93 6.2258	
92.0 165.60 61.698					0.9109 84.72 6.1378	0.9118 84.80 6.1438	0.9135 84.96 6.1554	0.9152 85.12 6.1669	0.9169 85.28 6.1782	0.9186 85.43 6.1893	0.9202 85.58 6.2002	0.9218 85.73 6.2110	0.9233 85.87 6.2216	
92.1 165.78 62.205					0.9102 84.66 6.1333	0.9111 84.74 6.1392	0.9129 84.90 6.1509	0.9146 85.06 6.1624	0.9163 85.21 6.1738	0.9179 85.37 6.1849	0.9195 85.52 6.1959	0.9211 85.67 6.2067	0.9227 85.82 6.2174	
92.2 165.96 62.715					0.9096 84.59 6.1287	0.9104 84.67 6.1346	0.9122 84.84 6.1464	0.9139 85.00 6.1580	0.9156 85.15 6.1694	0.9173 85.31 6.1806	0.9189 85.46 6.1916	0.9205 85.61 6.2025	0.9221 85.76 6.2131	
92.3 166.14 63.228					0.9089 84.53 6.1241	0.9098 84.61 6.1301	0.9115 84.77 6.1419	0.9132 84.93 6.1535	0.9149 85.09 6.1650	0.9166 85.25 6.1762	0.9183 85.40 6.1873	0.9199 85.55 6.1982	0.9215 85.70 6.2089	
92.4 166.32 63.745					0.9082 84.46 6.1195	0.9091 84.55 6.1255	0.9108 84.71 6.1374	0.9126 84.87 6.1491	0.9143 85.03 6.1605	0.9160 85.19 6.1718	0.9176 85.34 6.1830	0.9192 85.49 6.1939	0.9208 85.64 6.2047	
92.5 166.50 64.264					0.9075 84.40 6.1149	0.9084 84.48 6.1209	0.9102 84.65 6.1329	0.9119 84.81 6.1446	0.9136 84.97 6.1561	0.9153 85.13 6.1675	0.9170 85.28 6.1786	0.9186 85.43 6.1896	0.9202 85.58 6.2004	
92.6 166.68 64.786					0.9068 84.34 6.1103	0.9077 84.42 6.1163	0.9095 84.59 6.1283	0.9113 84.75 6.1401	0.9130 84.91 6.1517	0.9147 85.07 6.1631	0.9163 85.22 6.1743	0.9180 85.37 6.1853	0.9196 85.52 6.1962	
92.7 166.86 65.312					0.9061 84.27 6.1056	0.9070 84.36 6.1117	0.9088 84.52 6.1238	0.9106 84.69 6.1356	0.9123 84.85 6.1472	0.9140 85.01 6.1587	0.9157 85.16 6.1699	0.9173 85.31 6.1810	0.9189 85.46 6.1919	
92.8 167.04 65.841					0.9054 84.21 6.1010	0.9064 84.29 6.1071	0.9082 84.46 6.1192	0.9099 84.63 6.1311	0.9117 84.79 6.1428	0.9134 84.95 6.1543	0.9150 85.10 6.1656	0.9167 85.25 6.1767	0.9183 85.41 6.1877	
92.9 167.22 66.373					0.9048 84.15 6.0963	0.9057 84.23 6.1025	0.9075 84.40 6.1147	0.9092 84.56 6.1266	0.9110 84.73 6.1383	0.9127 84.88 6.1499	0.9144 85.04 6.1612	0.9160 85.20 6.1724	0.9177 85.35 6.1834	

TABLE 8 - CONTINUED

DENSITY OF COMPRESSED LIQUID NITROGEN - CONTINUED

1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA			TABLE ENTRIES										
1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL													
PSIA	12.000	14.696	25.000	50.000	75.000	100.000	150.000	200.000	250.000	300.000	350.000	400.000	450.000
ATM.	0.817	1.000	1.701	3.402	5.103	6.805	10.207	13.609	17.011	20.414	23.816	27.218	30.621
93.0 167.40 66.908					0.9041 84.08 6.0917	0.9050 84.17 6.0979	0.9068 84.34 6.1101	0.9086 84.50 6.1221	0.9103 84.65 6.1339	0.9120 84.82 6.1455	0.9137 84.98 6.1569	0.9154 85.14 6.1681	0.9170 85.29 6.1791
93.1 167.58 67.446					0.9043 84.02 6.0870	0.9043 84.10 6.0933	0.9061 84.27 6.1055	0.9079 84.44 6.1176	0.9097 84.60 6.1294	0.9114 84.76 6.1411	0.9131 84.92 6.1525	0.9148 85.08 6.1638	0.9164 85.23 6.1749
93.2 167.76 67.987					0.9027 83.95 6.0824	0.9036 84.04 6.0886	0.9054 84.21 6.1009	0.9072 84.38 6.1131	0.9090 84.54 6.1249	0.9107 84.70 6.1366	0.9124 84.86 6.1481	0.9141 85.02 6.1594	0.9158 85.17 6.1705
93.3 167.94 68.531					0.9020 83.89 6.0777	0.9029 83.97 6.0840	0.9043 84.15 6.0964	0.9061 84.31 6.1085	0.9083 84.48 6.1205	0.9101 84.64 6.1322	0.9118 84.80 6.1438	0.9135 84.96 6.1551	0.9151 85.11 6.1663
93.4 168.12 69.079					0.9013 83.82 6.0733	0.9022 83.91 6.0793	0.9041 84.08 6.0918	0.9059 84.25 6.1040	0.9077 84.42 6.1160	0.9094 84.58 6.1278	0.9111 84.74 6.1394	0.9128 84.90 6.1508	0.9145 85.05 6.1620
93.5 168.30 69.630					0.9006 83.76 6.0683	0.9015 83.85 6.0747	0.9034 84.02 6.0872	0.9052 84.19 6.0994	0.9070 84.35 6.1115	0.9088 84.52 6.1233	0.9105 84.68 6.1350	0.9122 84.84 6.1464	0.9139 84.99 6.1577
93.6 168.48 70.184					0.8999 83.69 6.0636	0.9008 83.78 6.0700	0.9027 83.96 6.0825	0.9045 84.13 6.0949	0.9063 84.29 6.1070	0.9081 84.46 6.1189	0.9098 84.62 6.1306	0.9115 84.78 6.1421	0.9132 84.93 6.1534
93.7 168.66 70.741					0.8992 83.63 6.0589	0.9002 83.72 6.0653	0.9020 83.89 6.0779	0.9039 84.06 6.0903	0.9057 84.23 6.1025	0.9074 84.40 6.1144	0.9092 84.56 6.1262	0.9109 84.72 6.1377	0.9126 84.87 6.1491
93.8 168.84 71.301					0.8985 83.56 6.0542	0.8995 83.65 6.0606	0.9013 83.83 6.0733	0.9032 84.00 6.0857	0.9050 84.17 6.0980	0.9068 84.33 6.1100	0.9085 84.50 6.1218	0.9103 84.66 6.1334	0.9119 84.81 6.1448
93.9 169.02 71.865					0.8978 83.50 6.0495	0.8988 83.59 6.0559	0.9006 83.76 6.0687	0.9025 83.94 6.0812	0.9043 84.11 6.0934	0.9061 84.27 6.1055	0.9079 84.44 6.1173	0.9096 84.60 6.1290	0.9113 84.75 6.1404
94.0 169.20 72.432					0.8971 83.43 6.0447	0.8981 83.52 6.0512	0.9000 83.70 6.0640	0.9018 83.87 6.0766	0.9037 84.04 6.0889	0.9055 84.21 6.1010	0.9072 84.37 6.1129	0.9090 84.54 6.1246	0.9107 84.69 6.1361
94.1 169.38 73.002					0.8964 83.37 6.0400	0.8974 83.46 6.0465	0.8993 83.64 6.0594	0.9011 83.81 6.0720	0.9030 83.98 6.0844	0.9048 84.15 6.0965	0.9066 84.31 6.1085	0.9083 84.48 6.1202	0.9100 84.63 6.1318
94.2 169.56 73.575					0.8957 83.30 6.0352	0.8967 83.39 6.0418	0.8986 83.57 6.0547	0.9005 83.75 6.0674	0.9023 83.92 6.0798	0.9041 84.09 6.0921	0.9059 84.25 6.1041	0.9077 84.41 6.1159	0.9094 84.57 6.1275
94.3 169.74 74.152					0.8950 83.24 6.0305	0.8960 83.33 6.0371	0.8979 83.51 6.0500	0.8998 83.68 6.0628	0.9016 83.85 6.0753	0.9035 84.02 6.0876	0.9052 84.19 6.0996	0.9070 84.35 6.1115	0.9087 84.51 6.1231
94.4 169.92 74.732					0.8943 83.17 6.0257	0.8953 83.26 6.0323	0.8972 83.44 6.0454	0.8991 83.62 6.0582	0.9010 83.79 6.0707	0.9028 83.96 6.0831	0.9046 84.13 6.0952	0.9063 84.29 6.1071	0.9081 84.45 6.1188
94.5 170.10 75.315						0.8946 83.20 6.0276	0.8965 83.38 6.0407	0.8984 83.55 6.0535	0.9003 83.73 6.0662	0.9021 83.90 6.0785	0.9039 84.07 6.0907	0.9057 84.23 6.1027	0.9074 84.39 6.1144
94.6 170.28 75.902						0.8938 83.13 6.0228	0.8958 83.31 6.0363	0.8977 83.49 6.0489	0.8996 83.67 6.0616	0.9014 83.84 6.0740	0.9033 84.01 6.0862	0.9050 84.17 6.0982	0.9068 84.33 6.1100
94.7 170.46 76.492						0.8931 83.06 6.0181	0.8951 83.25 6.0313	0.8970 83.43 6.0443	0.8989 83.60 6.0570	0.9008 83.77 6.0695	0.9026 83.94 6.0818	0.9044 84.11 6.0938	0.9061 84.27 6.1057
94.8 170.64 77.085						0.8924 83.00 6.0133	0.8944 83.18 6.0265	0.8963 83.36 6.0396	0.8982 83.54 6.0524	0.9001 83.71 6.0650	0.9019 83.88 6.0773	0.9037 84.05 6.0894	0.9055 84.21 6.1013
94.9 170.82 77.682						0.8917 82.93 6.0085	0.8937 83.12 6.0219	0.8956 83.30 6.0350	0.8975 83.48 6.0479	0.8994 83.65 6.0604	0.9013 83.82 6.0729	0.9031 83.99 6.0850	0.9048 84.15 6.0969

TABLE ENTRIES															
1. TEMPERATURE, K 2. TEMPERATURE, °F 3. VAPOR PRESSURE, PSIA				1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL											
PSIA	12.000	14.696	25.000	50.000	75.000	100.000	150.000	200.000	250.000	300.000	350.000	400.000	450.000		
ATM.	0.917	1.000	1.701	3.402	5.103	6.805	10.207	13.609	17.011	20.414	23.816	27.218	30.621		
75.0 171.00 78.282						0.8910 82.87 6.0037	0.8933 83.05 6.0171	0.8950 83.23 6.0307	0.8969 83.41 6.0432	0.8988 83.59 6.0559	0.9006 83.76 6.0683	0.9024 83.93 6.0805	0.9042 84.09 6.0925		
95.1 171.18 78.885						0.8903 82.80 5.9989	0.8923 82.99 6.0124	0.8943 83.17 6.0256	0.8962 83.35 6.0386	0.8981 83.52 6.0513	0.8999 83.70 6.0639	0.9018 83.87 6.0761	0.9035 84.03 6.0881		
95.2 171.36 79.492						0.8896 82.73 5.9941	0.8916 82.92 6.0077	0.8936 83.10 6.0210	0.8955 83.28 6.0340	0.8974 83.46 6.0468	0.8993 83.63 6.0593	0.9011 83.80 6.0716	0.9029 83.97 6.0837		
95.3 171.54 80.102						0.8889 82.67 5.9893	0.8909 82.86 6.0029	0.8929 83.04 6.0163	0.8949 83.22 6.0294	0.8967 83.40 6.0422	0.8986 83.57 6.0548	0.9004 83.74 6.0672	0.9022 83.91 6.0793		
95.4 171.72 80.716						0.8882 82.60 5.9845	0.8902 82.79 5.9982	0.8922 82.98 6.0116	0.8941 83.16 6.0247	0.8960 83.34 6.0376	0.8979 83.51 6.0503	0.8998 83.68 6.0627	0.9016 83.85 6.0749		
95.5 171.90 81.333						0.8874 82.53 5.9796	0.8895 82.72 5.9934	0.8915 82.91 6.0069	0.8934 83.09 6.0201	0.8954 83.27 6.0330	0.8972 83.45 6.0458	0.8991 83.62 6.0582	0.9009 83.79 6.0705		
95.6 172.08 81.953						0.8867 82.47 5.9748	0.8888 82.65 5.9886	0.8908 82.85 6.0022	0.8927 83.03 6.0154	0.8947 83.21 6.0285	0.8966 83.38 6.0412	0.8984 83.56 6.0538	0.9003 83.73 6.0661		
95.7 172.26 82.577						0.8860 82.40 5.9699	0.8881 82.59 5.9838	0.8901 82.78 5.9974	0.8921 82.96 6.0108	0.8940 83.15 6.0239	0.8959 83.32 6.0367	0.8978 83.50 6.0493	0.8996 83.67 6.0616		
95.8 172.44 83.204						0.8853 82.33 5.9650	0.8873 82.53 5.9793	0.8894 82.72 5.9927	0.8914 82.90 6.0061	0.8933 83.08 6.0193	0.8952 83.26 6.0321	0.8971 83.43 6.0448	0.8989 83.61 6.0572		
95.9 172.62 83.835						0.8845 82.27 5.9602	0.8866 82.46 5.9742	0.8887 82.65 5.9880	0.8907 82.84 6.0014	0.8926 83.02 6.0146	0.8946 83.20 6.0276	0.8964 83.37 6.0403	0.8983 83.54 6.0528		
96.0 172.80 84.469						0.8838 82.20 5.9553	0.8859 82.39 5.9694	0.8880 82.58 5.9832	0.8900 82.77 5.9968	0.8919 82.95 6.0100	0.8939 83.13 6.0230	0.8958 83.31 6.0358	0.8976 83.48 6.0483		
96.1 172.98 85.106						0.8831 82.13 5.9504	0.8852 82.33 5.9646	0.8873 82.52 5.9785	0.8893 82.71 5.9921	0.8913 82.89 6.0054	0.8932 83.07 6.0185	0.8951 83.25 6.0313	0.8970 83.42 6.0439		
96.2 173.16 85.748						0.8824 82.06 5.9455	0.8845 82.25 5.9597	0.8866 82.45 5.9737	0.8886 82.64 5.9874	0.8906 82.83 6.0008	0.8925 83.01 6.0139	0.8944 83.19 6.0268	0.8963 83.36 6.0394		
96.3 173.34 86.392						0.8816 82.00 5.9406	0.8838 82.19 5.9549	0.8858 82.39 5.9689	0.8879 82.58 5.9827	0.8899 82.76 5.9961	0.8918 82.94 6.0093	0.8938 83.12 6.0222	0.8956 83.30 6.0349		
96.4 173.52 87.040						0.8809 81.93 5.9356	0.8830 82.13 5.9500	0.8851 82.32 5.9641	0.8872 82.51 5.9779	0.8892 82.70 5.9915	0.8912 82.88 6.0047	0.8931 83.06 6.0177	0.8950 83.24 6.0304		
96.5 173.70 87.692						0.8802 81.86 5.9307	0.8823 82.06 5.9452	0.8844 82.25 5.9594	0.8865 82.45 5.9732	0.8885 82.63 5.9868	0.8905 82.82 6.0001	0.8924 83.00 6.0132	0.8943 83.17 6.0260		
96.6 173.88 88.347						0.8794 81.79 5.9258	0.8816 81.99 5.9403	0.8837 82.19 5.9546	0.8858 82.38 5.9685	0.8878 82.57 5.9821	0.8898 82.75 5.9955	0.8917 82.93 6.0086	0.8936 83.11 6.0215		
96.7 174.06 89.006						0.8787 81.72 5.9208	0.8809 81.92 5.9354	0.8830 82.12 5.9497	0.8851 82.32 5.9637	0.8871 82.50 5.9775	0.8891 82.69 5.9909	0.8911 82.87 6.0041	0.8930 83.05 6.0170		
96.8 174.24 89.668						0.8780 81.65 5.9168	0.8802 81.85 5.9305	0.8823 82.06 5.9440	0.8844 82.25 5.9580	0.8864 82.44 5.9728	0.8884 82.63 5.9863	0.8904 82.81 5.9995	0.8923 82.99 6.0125		
96.9 174.42 90.334						0.8772 81.59 5.9119	0.8794 81.79 5.9256	0.8816 81.99 5.9401	0.8837 82.18 5.9542	0.8857 82.38 5.9681	0.8877 82.56 5.9816	0.8897 82.75 5.9949	0.8916 82.93 6.0083		

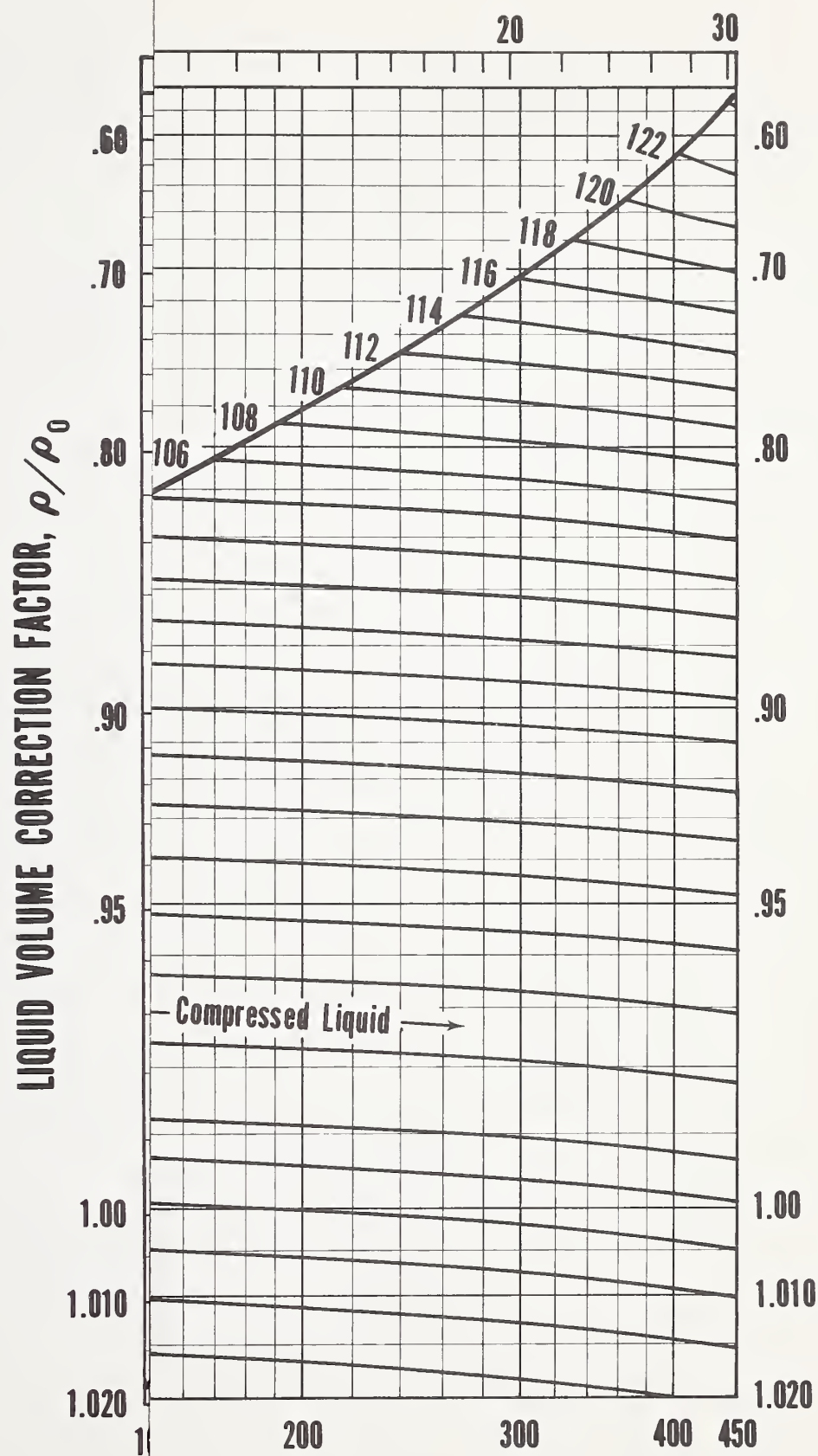
TABLE 8 - CONTINUED

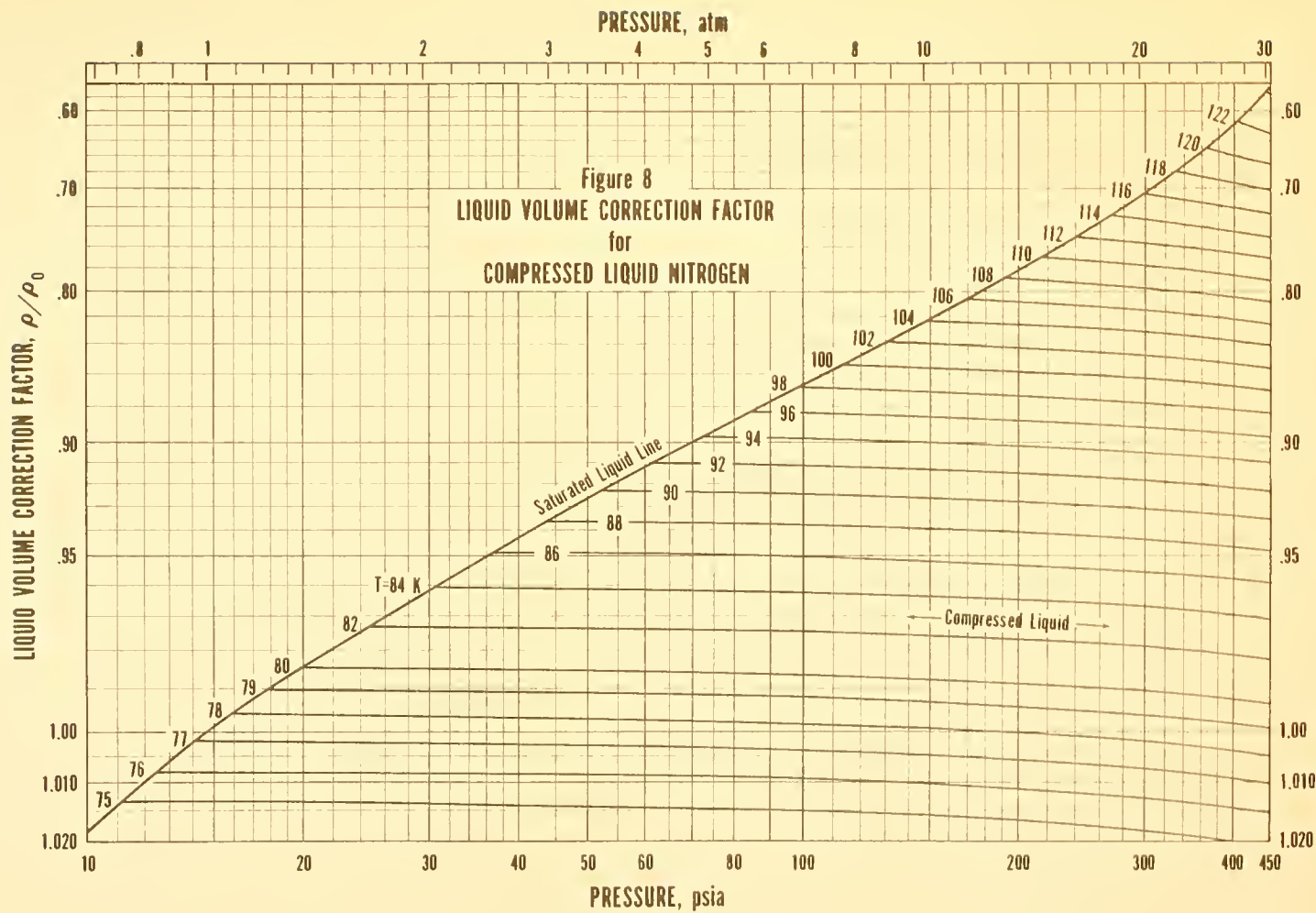
DENSITY OF COMPRESSED LIQUID NITROGEN - CONTINUED

1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA				TABLE ENTRIES										
				1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL										
PSIA	12.000	14.696	25.000	50.000	75.000	100.000	150.000	200.000	250.000	300.000	350.000	400.000	450.000	
ATM.	0.817	1.000	1.701	3.402	5.103	6.805	10.207	13.609	17.011	20.414	23.816	27.218	30.621	
97.0 174.60 91.004						0.8765 81.52 5.9059	0.8787 81.72 5.9207	0.8809 81.92 5.9353	0.8830 82.12 5.9495	0.8850 82.31 5.9634	0.8870 82.50 5.9770	0.8890 82.68 5.9904	0.8910 82.86 6.0034	
97.1 174.78 91.677						0.8757 81.45 5.9009	0.8780 81.65 5.9158	0.8801 81.86 5.9304	0.8823 82.05 5.9447	0.8843 82.25 5.9587	0.8864 82.43 5.9724	0.8883 82.62 5.9858	0.8903 82.80 5.9989	
97.2 174.96 92.353						0.8750 81.38 5.8959	0.8772 81.59 5.9109	0.8794 81.79 5.9256	0.8815 81.99 5.9399	0.8836 82.18 5.9540	0.8857 82.37 5.9677	0.8877 82.56 5.9812	0.8896 82.74 5.9944	
97.3 175.14 93.034						0.8743 81.31 5.8908	0.8765 81.52 5.9059	0.8787 81.72 5.9207	0.8808 81.92 5.9351	0.8829 82.11 5.9492	0.8850 82.31 5.9630	0.8870 82.49 5.9766	0.8890 82.68 5.9899	
97.4 175.32 93.717						0.8735 81.24 5.8858	0.8758 81.45 5.9010	0.8780 81.65 5.9158	0.8801 81.85 5.9303	0.8822 82.05 5.9445	0.8843 82.24 5.9584	0.8863 82.43 5.9720	0.8883 82.61 5.9853	
97.5 175.50 94.405						0.8728 81.17 5.8808	0.8750 81.38 5.8960	0.8772 81.59 5.9109	0.8794 81.79 5.9255	0.8815 81.98 5.9398	0.8836 82.18 5.9537	0.8856 82.37 5.9674	0.8876 82.55 5.9808	
97.6 175.68 95.096						0.8720 81.10 5.8757	0.8743 81.31 5.8910	0.8765 81.52 5.9060	0.8787 81.72 5.9207	0.8808 81.92 5.9350	0.8829 82.11 5.9490	0.8849 82.30 5.9627	0.8869 82.49 5.9762	
97.7 175.86 95.791						0.8713 81.03 5.8706	0.8735 81.24 5.8861	0.8758 81.45 5.9011	0.8780 81.65 5.9158	0.8801 81.85 5.9302	0.8822 82.05 5.9443	0.8842 82.24 5.9581	0.8862 82.42 5.9716	
97.8 176.04 96.489						0.8705 80.96 5.8656	0.8728 81.17 5.8811	0.8751 81.38 5.8962	0.8773 81.59 5.9110	0.8794 81.79 5.9255	0.8815 81.98 5.9396	0.8836 82.17 5.9535	0.8856 82.36 5.9671	
97.9 176.22 97.192						0.8698 80.89 5.8605	0.8721 81.11 5.8761	0.8743 81.32 5.8913	0.8765 81.52 5.9062	0.8787 81.72 5.9207	0.8808 81.92 5.9349	0.8829 82.11 5.9488	0.8849 82.30 5.9625	
98.0 176.40 97.898						0.8690 80.82 5.8554	0.8713 81.04 5.8710	0.8736 81.25 5.8864	0.8758 81.45 5.9013	0.8780 81.66 5.9159	0.8801 81.85 5.9302	0.8822 82.05 5.9442	0.8842 82.23 5.9579	
98.1 176.58 98.607						0.8682 80.75 5.8503	0.8706 80.97 5.8659	0.8729 81.18 5.8814	0.8751 81.39 5.8964	0.8773 81.59 5.9111	0.8794 81.79 5.9255	0.8815 81.98 5.9395	0.8835 82.17 5.9533	
98.2 176.76 99.320						0.8675 80.68 5.8451	0.8698 80.90 5.8610	0.8721 81.11 5.8765	0.8744 81.32 5.8916	0.8766 81.52 5.9063	0.8787 81.72 5.9207	0.8808 81.92 5.9349	0.8828 82.11 5.9487	
98.3 176.94 100.037							0.8691 80.83 5.8559	0.8714 81.04 5.8715	0.8736 81.25 5.8867	0.8758 81.46 5.9015	0.8780 81.66 5.9160	0.8801 81.85 5.9302	0.8822 82.04 5.9441	
98.4 177.12 100.758							0.8683 80.76 5.8509	0.8706 80.97 5.8665	0.8729 81.18 5.8818	0.8751 81.39 5.8967	0.8773 81.59 5.9112	0.8794 81.79 5.9255	0.8815 81.98 5.9394	
98.5 177.30 101.483							0.8676 80.69 5.8458	0.8699 80.90 5.8615	0.8722 81.12 5.8769	0.8744 81.32 5.8918	0.8766 81.52 5.9065	0.8787 81.72 5.9208	0.8808 81.92 5.9348	
98.6 177.48 102.211							0.8668 80.62 5.8407	0.8692 80.84 5.8565	0.8715 81.05 5.8719	0.8737 81.26 5.8870	0.8759 81.46 5.9017	0.8780 81.66 5.9161	0.8801 81.85 5.9302	
98.7 177.66 102.943							0.8661 80.55 5.8356	0.8684 80.77 5.8515	0.8707 80.98 5.8670	0.8730 81.19 5.8821	0.8752 81.39 5.8969	0.8773 81.59 5.9114	0.8794 81.79 5.9255	
98.8 177.84 103.679							0.8653 80.48 5.8305	0.8677 80.70 5.8465	0.8700 80.91 5.8621	0.8722 81.12 5.8773	0.8745 81.33 5.8921	0.8766 81.53 5.9067	0.8787 81.72 5.9209	
98.9 178.02 104.418							0.8645 80.41 5.8254	0.8669 80.63 5.8415	0.8693 80.84 5.8571	0.8715 81.05 5.8724	0.8737 81.26 5.8873	0.8759 81.46 5.9019	0.8780 81.66 5.9162	

1. TEMPERATURE, K 2. TEMPERATURE, °F 3. VAPOR PRESSURE, PSIA				TABLE ENTRIES										
				1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL										
PSIA	12.000	14.696	25.000	50.000	75.000	100.000	150.000	200.000	250.000	300.000	350.000	400.000	450.000	
ATM.	3.917	1.000	1.701	3.432	5.103	6.805	10.207	13.609	17.011	20.414	23.816	27.218	30.621	
99.0 173.20 105.162							0.8633 80.34 5.8203	0.8652 80.36 5.8354	0.8685 80.73 5.8522	0.8708 80.99 5.8675	0.8730 81.19 5.8825	0.8752 81.40 5.8972	0.8773 81.60 5.9116	
100.0 180.00 112.808							0.8561 79.62 5.7683	0.8586 79.35 5.7854	0.8611 80.08 5.8023	0.8635 80.71 5.8182	0.8658 80.52 5.8340	0.8681 80.74 5.8494	0.8703 80.94 5.8645	
101.0 181.80 120.847							0.8492 78.88 5.7150	0.8509 79.13 5.7331	0.8535 79.37 5.7507	0.8560 79.61 5.7678	0.8585 79.84 5.7844	0.8609 80.06 5.8007	0.8632 80.28 5.8165	
102.0 183.60 129.291							0.8400 78.13 5.6603	0.8429 78.39 5.6795	0.8457 78.65 5.6982	0.8483 78.90 5.7163	0.8510 79.14 5.7338	0.8535 79.38 5.7509	0.8560 79.61 5.7678	
103.0 185.40 138.150							0.8317 77.35 5.6040	0.8347 77.63 5.6245	0.8377 77.91 5.6443	0.8405 78.17 5.6635	0.8433 78.43 5.6821	0.8460 78.68 5.7001	0.8486 78.92 5.7177	
104.0 187.20 147.437							0.8231 76.55 5.5459	0.8263 76.85 5.5678	0.8295 77.14 5.5889	0.8325 77.42 5.6093	0.8354 77.70 5.6290	0.8382 77.96 5.6482	0.8410 78.22 5.6667	
105.0 189.00 157.154								0.8176 76.34 5.5093	0.8210 76.35 5.5319	0.8242 76.66 5.5537	0.8273 76.94 5.5746	0.8303 77.22 5.5949	0.8333 77.50 5.6145	
106.0 190.80 167.341								0.8087 75.21 5.4488	0.8123 75.54 5.4731	0.8157 75.86 5.4963	0.8190 76.17 5.5187	0.8222 76.47 5.5403	0.8253 76.76 5.5611	
107.0 192.60 177.981								0.7993 74.34 5.3860	0.8032 74.70 5.4122	0.8069 75.05 5.4372	0.8105 75.38 5.4611	0.8139 75.70 5.4841	0.8172 76.00 5.5063	
108.0 194.40 189.097								0.7936 73.44 5.3206	0.7973 73.83 5.3489	0.7998 74.20 5.3759	0.8017 74.56 5.4017	0.8053 74.90 5.4263	0.8088 75.22 5.4499	
109.0 196.20 200.700									0.7841 72.92 5.2831	0.7884 73.32 5.3123	0.7925 73.71 5.3401	0.7964 74.07 5.3666	0.8002 74.42 5.3919	
110.0 198.00 212.803									0.7733 71.97 5.2142	0.7786 72.41 5.2461	0.7830 72.82 5.2762	0.7873 73.22 5.3047	0.7913 73.59 5.3319	
111.0 199.80 225.419									0.7631 70.97 5.1417	0.7683 71.45 5.1767	0.7732 71.91 5.2096	0.7777 72.33 5.2405	0.7821 72.74 5.2699	
112.0 201.60 238.561									0.7517 69.91 5.0657	0.7575 70.45 5.1039	0.7628 70.94 5.1399	0.7678 71.41 5.1736	0.7725 71.85 5.2055	
113.0 203.40 252.244										0.7460 69.38 5.0266	0.7519 69.93 5.0666	0.7574 70.44 5.1037	0.7626 70.92 5.1384	
114.0 205.20 266.481										0.7338 68.24 4.9443	0.7404 68.86 4.9890	0.7465 69.43 5.0301	0.7522 69.95 5.0682	
115.0 207.00 281.288										0.7206 67.02 4.8587	0.7282 67.72 4.9064	0.7353 68.35 4.9523	0.7412 68.94 4.9944	
116.0 208.80 296.580										0.7063 65.59 4.7590	0.7150 66.49 4.8174	0.7227 67.21 4.8695	0.7297 67.86 4.9165	
117.0 210.60 312.675											0.7006 65.16 4.7205	0.7095 65.98 4.7804	0.7174 66.72 4.8336	
118.0 212.40 329.290												0.6946 63.67 4.6131	0.7091 64.65 4.6835	0.7342 65.49 4.7447

1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA			TABLE ENTRIES										
			1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (72°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL										
PSIA	12.330	14.696	25.039	50.000	75.000	100.000	150.000	200.000	250.000	300.000	350.000	400.000	450.000
ATM.	0.317	1.000	1.791	3.492	5.193	6.805	10.207	13.609	17.011	20.414	23.816	27.218	30.621
119.0 214.20 346.543											0.6665 61.99 4.4909	0.6792 63.17 4.5765	0.6898 64.16 4.6481
120.0 216.00 364.456												0.6612 61.50 4.4554	0.6741 62.69 4.5418
121.0 217.80 383.051												0.6402 59.54 4.3135	0.6563 61.04 4.4223
122.0 219.60 402.351													0.6357 59.13 4.2837
123.0 221.40 422.383													0.6106 56.79 4.1146
124.0 223.20 443.175													0.5765 53.62 3.8848







8. ARGON

The data for argon given here are from Gosman, et al. (1969). The entire PVT tabulations were calculated by a simultaneous solution of the vapor pressure equation and the equation of state reported by these authors. The calculation of each point was performed by solving the vapor pressure equation for either P or T depending on which was the integral value input. Using the P and T so obtained, a corresponding density was found from the equation of state.

Values near room temperature are given in table 9, uncertainties for the data in table 10, values for the saturated liquid are given in table 11 and values for the compressed liquid are shown in table 12. The values differ from those in the CGA pamphlet P-6

Table 9

Density of Argon at 1 Atmosphere Near Room Temperature

Temperature	Density		
	gram-mole/cm ³	lb/ft ³	lb/gal
0 C	0.000044659	0.111373	0.014888
68 F	0.000041601	0.103749	0.013869
70 F	0.000041444	0.103356	0.013817
Temperature	Volume		
	cm ³ /gram-mole	ft ³ /lb	gal/lb
0 C	22392	8.979	67.166
68 F	24038	9.639	72.102
70 F	24129	9.675	72.376
Temperature	Density Ratios and Equivalent volumes		
	$\frac{\text{density at NBP}^*}{\text{density at the temperature indicated}}$		
	dimensionless	$\frac{\text{lb/gal}}{\text{lb/ft}^3} = \text{ft}^3/\text{gal}$	
0 C	781.34	104.45	
68 F	838.75	112.13	
70 F	841.94	112.55	

* 87.020 lb/ft³ or 11.6329 lb/gal

by about 0.02% primarily because a higher order interpolation is used here. The value of the density at the NBP differs from that in the CGA pamphlet P-6 by 0.04%. The new correlation includes quite recent data, both on PVT and on the temperature scale corrections, and should, therefore, be more accurate.

Table 10
Uncertainties in the Data for Argon

variable	uncertainty	range of temperature
temperature	0.08%	84 to 87 K
	0.02%	82 to 154 K
	0.015 K	room temperature
volume	0.1%	triple point to 145 K
	increase to 1%	linearly from 145 K to critical
	0.01%	room temperature
pressure	0.1%	84 to 87 K
	0.02%	87 to 154 K
	0.01%	room temperature

The specific volume for the saturated liquid is plotted in figure 9. The liquid volume correction factor for the saturated liquid is shown in figure 10 and the liquid volume correction factor for the compressed liquid is plotted in figure 11.

TABLE 11

SATURATED LIQUID ARGON

ATM	PRESSURE		TEMPERATURE		DENSITY		VOLUME		GAL/LB	LIQ VOLUME CORRECTION FACTOR		DENSITY RATIO	
	PSIA	KELVIN	RANKINE	GRAM-MOLE/ CM ³	LB/FT ³	LB/GAL	CM ³ / GRAM-MOLE	FT ³ /LB				NTP (70°F) CORRECTION FACTOR	FT ³ /GAL
0.680	9.990	83.800	150.84	0.035413	88.315	11.8059	28.239	0.011323	0.08470	1.0149		114.22	
0.680	10.000	83.808	150.86	0.035411	88.311	11.8055	28.240	0.011324	0.08471	1.0148		114.22	
0.687	10.093	83.889	151.00	0.035400	88.282	11.8016	28.249	0.011327	0.08473	1.0145		114.18	
0.696	10.224	84.000	151.20	0.035383	88.242	11.7962	28.262	0.011333	0.08477	1.0140		114.13	
0.732	10.757	84.444	152.00	0.035318	88.079	11.7745	28.314	0.011353	0.08493	1.0122		113.92	
0.779	11.455	85.000	153.00	0.035236	87.875	11.7472	28.380	0.011380	0.08513	1.0098		113.66	
0.817	12.000	85.417	153.75	0.035174	87.720	11.7265	28.430	0.011400	0.08528	1.0081		113.46	
0.829	12.187	85.556	154.00	0.035154	87.669	11.7196	28.446	0.011407	0.08533	1.0075		113.39	
0.871	12.798	86.000	154.80	0.035087	87.503	11.6975	28.500	0.011428	0.08549	1.0056		113.18	
0.881	12.954	86.111	155.00	0.035071	87.462	11.6919	28.514	0.011434	0.08553	1.0051		113.12	
0.936	13.758	86.667	156.00	0.034987	87.253	11.6641	28.582	0.011461	0.08573	1.0027		112.85	
0.953	14.000	86.829	156.29	0.034962	87.192	11.6559	28.602	0.011469	0.08579	1.0020		112.77	
0.970	14.259	87.000	156.60	0.034937	87.127	11.6472	28.623	0.011477	0.08586	1.0012		112.69	
0.993	14.600	87.222	157.00	0.034903	87.043	11.6360	28.651	0.011489	0.08594	1.0003		112.58	
1.000	14.696	87.284	157.11	0.034893	87.020	11.6329	28.659	0.011492	0.08596	1.0000		112.55	
1.053	15.481	87.778	158.00	0.034818	86.832	11.6077	28.721	0.011516	0.08615	0.9978		112.31	
1.078	15.845	88.000	158.40	0.034784	86.747	11.5964	28.749	0.011528	0.08623	0.9969		112.20	
1.099	16.000	88.094	158.57	0.034770	86.711	11.5916	28.761	0.011533	0.08627	0.9965		112.15	
1.116	16.402	88.333	159.00	0.034733	86.619	11.5793	28.791	0.011545	0.08636	0.9954		112.03	
1.182	17.365	88.889	160.00	0.034647	86.406	11.5508	28.862	0.011573	0.08657	0.9929		111.76	
1.195	17.562	89.000	160.20	0.034630	86.363	11.5450	28.877	0.011579	0.08662	0.9924		111.70	
1.225	18.000	89.243	160.64	0.034592	86.269	11.5324	28.908	0.011592	0.08671	0.9914		111.58	
1.250	18.370	89.444	161.00	0.034561	86.191	11.5220	28.934	0.011602	0.08679	0.9905		111.48	
1.321	19.418	90.000	162.00	0.034474	85.974	11.4931	29.007	0.011631	0.08701	0.9880		111.20	
1.361	20.000	90.298	162.54	0.034427	85.858	11.4775	29.047	0.011647	0.08713	0.9866		111.05	
1.396	20.512	90.556	163.00	0.034387	85.757	11.4640	29.081	0.011661	0.08723	0.9855		110.92	
1.458	21.420	91.000	163.80	0.034317	85.582	11.4407	29.140	0.011685	0.08741	0.9835		110.69	
1.473	21.652	91.111	164.00	0.034299	85.538	11.4348	29.155	0.011691	0.08745	0.9830		110.63	
1.497	22.000	91.277	164.30	0.034273	85.473	11.4261	29.177	0.011700	0.08752	0.9822		110.55	
1.524	22.839	91.667	165.00	0.034211	85.318	11.4054	29.230	0.011721	0.08768	0.9804		110.35	
1.614	23.574	92.000	165.60	0.034158	85.186	11.3877	29.276	0.011739	0.08781	0.9789		110.18	
1.633	24.000	92.189	165.94	0.034128	85.111	11.3776	29.302	0.011749	0.08789	0.9781		110.08	
1.638	24.074	92.222	166.00	0.034123	85.097	11.3759	29.306	0.011751	0.08791	0.9779		110.06	
1.726	25.360	92.778	167.00	0.034034	84.875	11.3462	29.383	0.011782	0.08814	0.9754		109.78	
1.762	25.888	93.000	167.40	0.033998	84.786	11.3343	29.414	0.011794	0.08823	0.9743		109.66	
1.769	26.000	93.047	167.48	0.033990	84.767	11.3318	29.420	0.011797	0.08825	0.9741		109.64	
1.817	26.696	93.333	168.00	0.033944	84.652	11.3163	29.460	0.011813	0.08837	0.9728		109.49	
1.905	28.000	93.856	168.94	0.033859	84.441	11.2881	29.534	0.011843	0.08859	0.9704		109.21	
1.911	28.085	93.889	169.00	0.033854	84.428	11.2863	29.539	0.011844	0.08860	0.9702		109.20	
1.930	28.369	94.000	169.20	0.033836	84.383	11.2803	29.554	0.011851	0.08865	0.9697		109.14	
2.000	29.392	94.394	169.91	0.033772	84.223	11.2589	29.611	0.011873	0.08882	0.9679		108.93	
2.009	29.527	94.444	170.00	0.033764	84.202	11.2562	29.618	0.011876	0.08884	0.9676		108.91	

* Equivalent cubic feet (NTP) per gallon of liquid

TABLE 11 CONTINUED

SATURATED LIQUID ARGON

PRESSURE			TEMPERATURE		DENSITY		VOLUME		LIQ VOLUME CORRECTION FACTOR	DENSITY RATIO	
ATM	PSIA	KELVIN	RANKINE	GRAM-MOLE/ CM ³	LB/FT ³	LB/GAL	CM ³ / GRAM-MOLE	FT ³ /LB		GAL/LB	NTP (70°F) CORRECTION
2.041	30.000	94.622	170.32	0.033735	84.130	11.2465	29.643	0.011886	0.08892	0.9668	108.81
2.111	31.024	95.000	171.00	0.033673	83.975	11.2259	29.698	0.011908	0.08908	0.9650	108.61
2.177	32.000	95.352	171.63	0.033615	83.831	11.2066	29.749	0.011929	0.08923	0.9634	108.43
2.217	32.577	95.556	172.00	0.033581	83.748	11.1954	29.778	0.011941	0.08932	0.9624	108.32
2.304	33.860	96.000	172.80	0.033508	83.565	11.1710	29.844	0.011967	0.08952	0.9603	108.08
2.314	34.000	96.048	172.89	0.033500	83.545	11.1683	29.851	0.011970	0.08954	0.9601	108.06
2.326	34.187	96.111	173.00	0.033490	83.519	11.1648	29.860	0.011973	0.08957	0.9598	108.02
2.440	35.856	96.667	174.00	0.033397	83.289	11.1341	29.943	0.012006	0.08981	0.9571	107.72
2.450	36.000	96.714	174.08	0.033389	83.269	11.1315	29.950	0.012009	0.08984	0.9569	107.70
2.510	36.886	97.000	174.60	0.033342	83.150	11.1156	29.992	0.012026	0.08996	0.9555	107.54
2.557	37.584	97.222	175.00	0.033305	83.057	11.1032	30.026	0.012040	0.09006	0.9545	107.43
2.586	38.000	97.353	175.24	0.033283	83.003	11.0959	30.046	0.012048	0.09012	0.9538	107.35
2.679	39.374	97.778	176.00	0.033211	82.825	11.0721	30.110	0.012074	0.09032	0.9518	107.12
2.722	40.000	97.968	176.34	0.033180	82.746	11.0615	30.139	0.012085	0.09040	0.9509	107.02
2.729	40.107	98.000	176.40	0.033174	82.732	11.0596	30.144	0.012087	0.09042	0.9507	107.00
2.805	41.226	98.333	177.00	0.033118	82.592	11.0409	30.195	0.012108	0.09057	0.9491	106.82
2.858	42.000	98.560	177.41	0.033080	82.496	11.0281	30.230	0.012122	0.09068	0.9480	106.70
2.936	43.142	98.889	178.00	0.033024	82.357	11.0095	30.281	0.012142	0.09083	0.9464	106.52
2.962	43.533	99.000	178.20	0.033005	82.310	11.0032	30.299	0.012149	0.09088	0.9459	106.46
2.994	44.000	99.132	178.44	0.032983	82.254	10.9958	30.319	0.012157	0.09094	0.9452	106.39
3.000	44.088	99.156	178.48	0.032978	82.244	10.9944	30.323	0.012159	0.09096	0.9451	106.37
3.070	45.123	99.444	179.00	0.032929	82.121	10.9780	30.368	0.012177	0.09109	0.9437	106.21
3.130	46.000	99.685	179.43	0.032888	82.019	10.9643	30.406	0.012192	0.09120	0.9425	106.08
3.210	47.170	100.000	180.00	0.032834	81.884	10.9463	30.456	0.012212	0.09135	0.9410	105.91
3.266	48.000	100.220	180.40	0.032796	81.790	10.9338	30.491	0.012226	0.09146	0.9399	105.79
3.354	49.285	100.556	181.00	0.032739	81.646	10.9145	30.545	0.012248	0.09162	0.9382	105.60
3.402	50.000	100.739	181.33	0.032707	81.567	10.9039	30.574	0.012260	0.09171	0.9373	105.50
3.472	51.026	101.000	181.80	0.032662	81.455	10.8889	30.617	0.012277	0.09184	0.9361	105.35
3.502	51.469	101.111	182.00	0.032643	81.407	10.8825	30.635	0.012284	0.09189	0.9355	105.29
3.538	52.000	101.244	182.24	0.032620	81.350	10.8749	30.656	0.012293	0.09196	0.9348	105.22
3.656	53.723	101.667	183.00	0.032546	81.166	10.8504	30.725	0.012320	0.09216	0.9327	104.98
3.674	54.000	101.734	183.12	0.032535	81.137	10.8465	30.736	0.012325	0.09220	0.9324	104.94
3.750	55.109	102.000	183.60	0.032488	81.022	10.8310	30.780	0.012342	0.09233	0.9311	104.79
3.811	56.000	102.211	183.98	0.032451	80.930	10.8187	30.815	0.012356	0.09243	0.9300	104.67
3.814	56.048	102.222	184.00	0.032449	80.925	10.8181	30.817	0.012357	0.09244	0.9300	104.67
3.947	58.000	102.676	184.82	0.032370	80.727	10.7916	30.893	0.012388	0.09266	0.9277	104.41
3.977	58.447	102.778	185.00	0.032352	80.682	10.7856	30.910	0.012394	0.09272	0.9272	104.35
4.000	58.784	102.855	185.14	0.032338	80.648	10.7811	30.923	0.012400	0.09276	0.9268	104.31
4.044	59.427	103.000	185.40	0.032313	80.584	10.7725	30.947	0.012409	0.09283	0.9260	104.23
4.083	60.000	103.129	185.63	0.032290	80.528	10.7650	30.969	0.012418	0.09289	0.9254	104.15
4.145	60.919	103.333	186.00	0.032254	80.438	10.7529	31.004	0.012432	0.09300	0.9244	104.04
4.219	62.000	103.571	186.43	0.032212	80.333	10.7389	31.044	0.012448	0.09312	0.9232	103.90
4.319	63.467	103.889	187.00	0.032156	80.192	10.7201	31.099	0.012470	0.09328	0.9215	103.72
4.354	63.986	104.000	187.20	0.032136	80.143	10.7135	31.118	0.012478	0.09334	0.9210	103.66
4.355	64.000	104.003	187.21	0.032135	80.142	10.7134	31.118	0.012478	0.09334	0.9210	103.65

TABLE 11 CONTINUED

SATURATED LIQUID ARGON

PRESSURE		TEMPERATURE		DENSITY		VOLUME		LIQ VOLUME CORRECTION FACTOR		DENSITY RATIO	
ATM	PSIA	KELVIN	RANKINE	GRAM-MOLE/ CM ³	LB/FT ³	LB/GAL	CM ³ / GRAM-MOLE	FT ³ /LB	GAL/LB	NTP (70°F) CORRECTION FACTOR	VOLUME CORRECTION FACTOR*
4.491	66.000	104.425	187.97	0.032060	79.954	10.6883	31.191	0.012507	0.09356	0.9188	103.441
4.497	66.092	104.444	188.00	0.032057	79.945	10.6871	31.195	0.012509	0.09357	0.9187	103.440
4.627	68.000	104.838	188.71	0.031986	79.770	10.6636	31.263	0.012536	0.09378	0.9167	103.17
4.681	68.795	105.000	189.00	0.031957	79.697	10.6540	31.292	0.012547	0.09386	0.9159	103.08
4.763	70.000	105.243	189.44	0.031914	79.589	10.6394	31.335	0.012565	0.09399	0.9146	102.94
4.871	71.578	105.556	190.00	0.031857	79.448	10.6206	31.390	0.012587	0.09416	0.9130	102.76
4.899	72.000	105.639	190.15	0.031842	79.411	10.6156	31.405	0.012593	0.09420	0.9126	102.71
5.000	73.480	105.926	190.67	0.031790	79.281	10.5983	31.456	0.012613	0.09435	0.9111	102.54
5.026	73.862	106.000	190.80	0.031777	79.247	10.5938	31.469	0.012619	0.09439	0.9107	102.50
5.035	74.000	106.027	190.85	0.031772	79.235	10.5922	31.474	0.012621	0.09441	0.9105	102.48
5.065	74.441	106.111	191.00	0.031757	79.197	10.5871	31.489	0.012627	0.09445	0.9101	102.43
5.171	76.000	106.407	191.53	0.031703	79.063	10.5592	31.543	0.012648	0.09461	0.9086	102.26
5.266	77.387	106.667	192.00	0.031656	78.945	10.5534	31.590	0.012667	0.09476	0.9072	102.11
5.308	78.000	106.780	192.20	0.031635	78.893	10.5465	31.611	0.012675	0.09482	0.9066	102.04
5.389	79.194	107.000	192.60	0.031595	78.793	10.5331	31.651	0.012691	0.09494	0.9055	101.91
5.444	80.000	107.147	192.86	0.031568	78.726	10.5241	31.678	0.012702	0.09502	0.9047	101.82
5.472	80.416	107.222	193.00	0.031554	78.691	10.5195	31.692	0.012708	0.09506	0.9043	101.78
5.580	82.000	107.507	193.51	0.031502	78.561	10.5021	31.744	0.012729	0.09522	0.9028	101.61
5.684	83.530	107.778	194.00	0.031452	78.437	10.4854	31.795	0.012749	0.09537	0.9014	101.45
5.716	84.000	107.860	194.15	0.031436	78.399	10.4804	31.810	0.012755	0.09542	0.9009	101.40
5.770	84.799	108.000	194.40	0.031411	78.334	10.4718	31.836	0.012766	0.09549	0.9002	101.32
5.852	86.000	108.208	194.77	0.031372	78.238	10.4589	31.875	0.012781	0.09561	0.8991	101.19
5.902	86.730	108.333	195.00	0.031349	78.180	10.4512	31.899	0.012791	0.09568	0.8984	101.12
5.988	88.000	108.550	195.39	0.031309	78.080	10.4378	31.940	0.012807	0.09581	0.8973	100.99
6.000	88.176	108.580	195.44	0.031303	78.066	10.4359	31.946	0.012810	0.09582	0.8971	100.97
6.124	90.000	108.886	195.99	0.031246	77.924	10.4169	32.004	0.012833	0.09600	0.8955	100.79
6.125	90.018	108.889	196.00	0.031245	77.922	10.4167	32.005	0.012833	0.09600	0.8955	100.78
6.171	90.686	109.000	196.20	0.031225	77.870	10.4098	32.026	0.012842	0.09606	0.8949	100.72
6.260	92.000	109.217	196.59	0.031184	77.769	10.3962	32.068	0.012859	0.09619	0.8937	100.59
6.355	93.394	109.444	197.00	0.031141	77.663	10.3820	32.112	0.012876	0.09632	0.8925	100.45
6.396	94.000	109.543	197.18	0.031123	77.617	10.3759	32.131	0.012884	0.09638	0.8919	100.39
6.532	96.000	109.863	197.75	0.031063	77.466	10.3557	32.193	0.012909	0.09656	0.8902	100.19
6.591	96.862	110.000	198.00	0.031037	77.402	10.3471	32.220	0.012920	0.09665	0.8895	100.11
6.668	98.000	110.179	198.32	0.031003	77.317	10.3358	32.255	0.012934	0.09675	0.8885	100.00
6.805	100.000	110.491	198.88	0.030944	77.170	10.3161	32.317	0.012958	0.09694	0.8868	99.81
6.833	100.420	110.556	199.00	0.030932	77.139	10.3120	32.329	0.012964	0.09697	0.8865	99.77
6.941	102.000	110.798	199.44	0.030885	77.024	10.2967	32.378	0.012984	0.09712	0.8851	99.62
7.000	102.872	110.931	199.67	0.030860	76.961	10.2882	32.404	0.012994	0.09720	0.8844	99.54
7.031	103.334	111.000	199.80	0.030847	76.928	10.2838	32.418	0.012999	0.09724	0.8840	99.50
7.077	104.000	111.100	199.98	0.030828	76.880	10.2774	32.438	0.013007	0.09730	0.8835	99.44
7.082	104.072	111.111	200.00	0.030826	76.875	10.2767	32.441	0.013008	0.09731	0.8834	99.43
7.213	106.000	111.399	200.52	0.030771	76.738	10.2583	32.499	0.013031	0.09748	0.8818	99.25
7.337	107.819	111.667	201.00	0.030719	76.609	10.2412	32.553	0.013053	0.09765	0.8804	99.09
7.349	108.000	111.693	201.05	0.030714	76.597	10.2395	32.559	0.013055	0.09766	0.8802	99.07
7.485	110.000	111.984	201.57	0.030658	76.457	10.2208	32.618	0.013079	0.09784	0.8786	98.89

TABLE 11 CONTINUED

SATURATED LIQUID ARGON

PRESSURE			TEMPERATURE		DENSITY		VOLUME		LIQ VOLUME CORRECTION FACTOR		DENSITY RATIO	
ATM	PSIA	KELVIN	RANKINE	GRAM-MOLE/CM ³	LB/FT ³	LB/GAL	CM ³ /GRAM-MOLE	FT ³ /LB	GAL/LB			
7.493	110.113	112.000	201.60	0.030655	76.449	10.2197	32.621	0.013081	0.09785	0.8785	98.88	
7.598	111.661	112.222	202.00	0.030612	76.342	10.2054	32.667	0.013099	0.09799	0.8773	98.74	
7.621	112.000	112.271	202.09	0.030602	76.318	10.2023	32.677	0.013103	0.09802	0.8770	98.71	
7.757	114.000	112.554	202.60	0.030547	76.181	10.1840	32.736	0.013127	0.09819	0.8754	98.53	
7.866	115.601	112.778	203.00	0.030504	76.073	10.1694	32.783	0.013145	0.09833	0.8742	98.39	
7.893	116.000	112.833	203.10	0.030493	76.045	10.1658	32.794	0.013150	0.09837	0.8739	98.36	
7.975	117.204	113.000	203.40	0.030460	75.964	10.1550	32.830	0.013164	0.09847	0.8730	98.25	
8.000	117.568	113.050	203.49	0.030451	75.940	10.1517	32.840	0.013168	0.09851	0.8727	98.22	
8.029	118.000	113.110	203.60	0.030439	75.911	10.1478	32.853	0.013173	0.09854	0.8723	98.18	
8.141	119.639	113.333	204.00	0.030395	75.801	10.1332	32.900	0.013192	0.09869	0.8711	98.04	
8.165	120.000	113.382	204.09	0.030385	75.777	10.1300	32.910	0.013197	0.09872	0.8708	98.01	
8.302	122.000	113.652	204.57	0.030332	75.645	10.1123	32.968	0.013220	0.09889	0.8693	97.84	
8.422	123.777	113.889	205.00	0.030286	75.529	10.0967	33.019	0.013240	0.09904	0.8679	97.69	
8.438	124.000	113.918	205.05	0.030280	75.514	10.0948	33.025	0.013243	0.09906	0.8678	97.67	
8.480	124.617	114.000	205.20	0.030264	75.474	10.0894	33.043	0.013250	0.09911	0.8673	97.62	
8.574	126.000	114.182	205.53	0.030228	75.384	10.0774	33.082	0.013265	0.09923	0.8663	97.50	
8.710	128.000	114.442	206.00	0.030176	75.255	10.0601	33.139	0.013288	0.09940	0.8648	97.33	
8.711	128.017	114.444	206.00	0.030175	75.254	10.0600	33.139	0.013288	0.09940	0.8648	97.33	
8.846	130.000	114.700	206.46	0.030125	75.127	10.0430	33.195	0.013311	0.09957	0.8633	97.17	
8.982	132.000	114.955	206.92	0.030074	75.000	10.0260	33.252	0.013333	0.09974	0.8619	97.00	
9.000	132.264	114.988	206.98	0.030067	74.983	10.0238	33.259	0.013336	0.09976	0.8617	96.98	
9.006	132.359	115.000	207.00	0.030065	74.977	10.0230	33.262	0.013337	0.09977	0.8616	96.97	
9.118	134.000	115.206	207.37	0.030023	74.874	10.0092	33.308	0.013356	0.09991	0.8604	96.84	
9.254	136.000	115.456	207.82	0.029973	74.749	9.9924	33.363	0.013378	0.10008	0.8590	96.68	
9.309	136.806	115.556	208.00	0.029953	74.698	9.9857	33.386	0.013387	0.10014	0.8584	96.61	
9.390	138.000	115.702	208.26	0.029923	74.624	9.9758	33.419	0.013400	0.10024	0.8576	96.52	
9.526	140.000	115.947	208.70	0.029874	74.501	9.9593	33.474	0.013423	0.10041	0.8561	96.36	
9.556	140.440	116.000	208.80	0.029863	74.474	9.9557	33.486	0.013427	0.10044	0.8558	96.32	
9.619	141.359	116.111	209.00	0.029840	74.418	9.9482	33.512	0.013438	0.10052	0.8552	96.25	
9.662	142.000	116.188	209.14	0.029825	74.379	9.9430	33.529	0.013445	0.10057	0.8547	96.20	
9.799	144.000	116.428	209.57	0.029776	74.257	9.9267	33.584	0.013467	0.10074	0.8533	96.04	
9.935	146.000	116.664	210.00	0.029727	74.136	9.9106	33.639	0.013489	0.10090	0.8519	95.89	
9.936	146.019	116.667	210.00	0.029720	74.135	9.9104	33.640	0.013489	0.10090	0.8519	95.88	
10.000	146.960	116.777	210.20	0.029704	74.078	9.9028	33.665	0.013499	0.10098	0.8513	95.81	
10.071	148.000	116.899	210.42	0.029679	74.016	9.8945	33.694	0.013511	0.10107	0.8506	95.73	
10.130	148.867	117.000	210.60	0.029658	73.964	9.8876	33.717	0.013520	0.10114	0.8500	95.66	
10.207	150.000	117.131	210.84	0.029631	73.897	9.8786	33.748	0.013532	0.10123	0.8492	95.58	
10.260	150.788	117.222	211.00	0.029613	73.850	9.8723	33.769	0.013541	0.10129	0.8487	95.52	
10.343	152.000	117.361	211.25	0.029584	73.778	9.8627	33.802	0.013554	0.10139	0.8478	95.42	
10.479	154.000	117.589	211.66	0.029537	73.660	9.8470	33.856	0.013576	0.10155	0.8465	95.27	
10.592	155.667	117.778	212.00	0.029497	73.563	9.8339	33.901	0.013594	0.10169	0.8454	95.14	
10.615	156.000	117.815	212.07	0.029490	73.543	9.8313	33.910	0.013597	0.10172	0.8451	95.12	
10.727	157.650	118.000	212.40	0.029451	73.447	9.8185	33.955	0.013615	0.10185	0.8440	95.00	
10.751	158.000	118.039	212.47	0.029443	73.427	9.8158	33.964	0.013619	0.10188	0.8438	94.97	
10.887	160.000	118.262	212.87	0.029396	73.311	9.8002	34.018	0.013641	0.10204	0.8425	94.82	

TABLE 11 CONTINUED

SATURATED LIQUID ARGON

PRESSURE	TEMPERATURE			DENSITY	GRAM-MOLE/ CM ³	LB/GAL	CM ³ / GRAM-MOLE	VOLUME FT ³ /LB	GAL/LB	DENSITY RATIO	
	ATM	PSIA	KELVIN	RANKINE						LIQ VOLUME CORRECTION FACTOR	NIP (70°F) VOLUME CORRECTION FACTOR*
10.932		160.657	118.333	213.00	0.029381	73.273	34.035	0.013648	0.10209	0.8420	94.77
11.000		161.656	118.443	213.20	0.029358	73.216	34.062	0.013658	0.10217	0.8414	94.70
11.023		162.000	118.482	213.27	0.029350	73.196	34.071	0.013662	0.10220	0.8411	94.67
11.159		164.000	118.700	213.66	0.029304	73.081	34.125	0.013683	0.10236	0.8398	94.52
11.279		165.761	118.889	214.00	0.029264	72.982	34.171	0.013702	0.10250	0.8387	94.39
11.296		166.000	118.916	214.05	0.029259	72.968	34.178	0.013705	0.10252	0.8385	94.38
11.350		166.796	119.000	214.20	0.029241	72.923	34.199	0.013713	0.10258	0.8380	94.32
11.432		168.000	119.130	214.43	0.029213	72.854	34.231	0.013726	0.10268	0.8372	94.23
11.568		170.000	119.342	214.82	0.029168	72.742	34.284	0.013747	0.10284	0.8359	94.08
11.634		170.979	119.444	215.00	0.029146	72.687	34.310	0.013758	0.10291	0.8353	94.01
11.704		172.000	119.553	215.19	0.029123	72.630	34.337	0.013768	0.10300	0.8346	93.94
11.840		174.000	119.761	215.57	0.029079	72.518	34.389	0.013790	0.10315	0.8334	93.79
11.976		176.000	119.968	215.94	0.029034	72.408	34.442	0.013811	0.10331	0.8321	93.65
11.997		176.314	120.000	216.00	0.029027	72.391	34.451	0.013814	0.10334	0.8319	93.63
12.112		178.000	120.174	216.31	0.028990	72.297	34.495	0.013832	0.10347	0.8308	93.51
12.248		180.000	120.378	216.68	0.028946	72.187	34.547	0.013895	0.10363	0.8296	93.37
12.368		181.766	120.556	217.00	0.028907	72.091	34.593	0.013871	0.10376	0.8284	93.24
12.384		182.000	120.580	217.04	0.028902	72.078	34.600	0.013874	0.10378	0.8283	93.22
12.520		184.000	120.781	217.40	0.028859	71.969	34.652	0.013895	0.10394	0.8270	93.08
12.657		186.000	120.980	217.76	0.028815	71.861	34.704	0.013916	0.10410	0.8258	92.94
12.671		186.213	121.000	217.80	0.028811	71.850	34.709	0.013918	0.10411	0.8257	92.93
12.747		187.337	121.111	218.00	0.028786	71.790	34.739	0.013930	0.10420	0.8250	92.85
12.793		188.000	121.177	218.12	0.028772	71.753	34.756	0.013937	0.10425	0.8246	92.80
12.929		190.000	121.373	218.47	0.028729	71.646	34.808	0.013957	0.10441	0.8233	92.67
13.000		191.048	121.475	218.65	0.028707	71.590	34.835	0.013968	0.10449	0.8227	92.59
13.065		192.000	121.568	218.82	0.028686	71.539	34.860	0.013978	0.10457	0.8221	92.53
13.135		193.029	121.667	219.00	0.028664	71.485	34.887	0.013989	0.10464	0.8215	92.46
13.201		194.000	121.761	219.17	0.028643	71.433	34.912	0.013999	0.10472	0.8209	92.39
13.337		196.000	121.953	219.51	0.028601	71.327	34.964	0.014020	0.10488	0.8197	92.25
13.371		196.503	122.000	219.60	0.028590	71.301	34.977	0.014025	0.10492	0.8194	92.22
13.473		198.000	122.143	219.86	0.028559	71.221	35.016	0.014041	0.10503	0.8184	92.12
13.530		198.844	122.222	220.00	0.028541	71.177	35.037	0.014049	0.10510	0.8179	92.06
13.609		200.000	122.332	220.20	0.028516	71.116	35.068	0.014061	0.10519	0.8172	91.98
13.935		204.782	122.778	221.00	0.028416	70.867	35.191	0.014111	0.10556	0.8144	91.66
13.949		205.000	122.798	221.04	0.028412	70.856	35.197	0.014113	0.10557	0.8142	91.64
14.000		205.744	122.867	221.16	0.028396	70.817	35.216	0.014121	0.10563	0.8138	91.59
14.099		207.192	123.000	221.40	0.028366	70.742	35.253	0.014136	0.10574	0.8129	91.50
14.290		210.000	123.257	221.86	0.028308	70.597	35.325	0.014165	0.10596	0.8113	91.31
14.347		210.846	123.333	222.00	0.028291	70.553	35.347	0.014174	0.10603	0.8108	91.25
14.630		215.000	123.707	222.67	0.028205	70.341	35.454	0.014217	0.10635	0.8083	90.98
14.768		217.037	123.889	223.00	0.028164	70.237	35.507	0.014238	0.10650	0.8071	90.84
14.854		218.290	124.000	223.20	0.028138	70.173	35.539	0.014250	0.10660	0.8064	90.76
14.970		220.000	124.151	223.47	0.028103	70.086	35.583	0.014268	0.10673	0.8054	90.65
15.000		220.440	124.190	223.54	0.028095	70.064	35.594	0.014273	0.10677	0.8052	90.62

TABLE 11 CONTINUED

SATURATED LIQUID ARGON

PRESSURE			TEMPERATURE		DENSITY		VOLUME			LIQ VOLUME CORRECTION FACTOR		DENSITY RATIO	
ATM	PSIA	KELVIN	RANKINE	GRAM-MOLE / CM ³	LB / FT ³	LB / GAL	CM ³ / GRAM-MOLE	FT ³ / LB	GAL / LB			NTP (70°F)	VOLUME FACTOR *
15.198	223.356	124.444	224.00	0.028036	69.917	9.3465	35.669	0.014303	0.10699	0.8035		90.43	
15.310	225.000	124.587	224.26	0.028002	69.834	9.3355	35.711	0.014320	0.10712	0.8025		90.32	
15.637	229.806	125.000	225.00	0.027906	69.594	9.3033	35.835	0.014369	0.10749	0.7997		90.01	
15.651	230.000	125.017	225.03	0.027902	69.584	9.3020	35.840	0.014371	0.10750	0.7996		90.00	
15.991	235.000	125.439	225.79	0.027802	69.336	9.2688	35.968	0.014423	0.10789	0.7968		89.68	
16.000	235.136	125.451	225.81	0.027800	69.329	9.2679	35.972	0.014424	0.10790	0.7967		89.67	
16.085	236.388	125.556	226.00	0.027775	69.267	9.2596	36.004	0.014437	0.10800	0.7960		89.59	
16.331	240.000	125.856	226.54	0.027703	69.089	9.2358	36.097	0.014474	0.10827	0.7939		89.36	
16.453	241.750	126.000	226.80	0.027669	69.003	9.2244	36.142	0.014492	0.10841	0.7930		89.25	
16.542	243.104	126.111	227.00	0.027642	68.937	9.2155	36.176	0.014506	0.10851	0.7922		89.16	
16.671	245.000	126.266	227.28	0.027601	68.844	9.2031	36.225	0.014526	0.10866	0.7911		89.04	
16.832	249.832	126.657	227.98	0.027511	68.608	9.1716	36.349	0.014575	0.10903	0.7884		88.74	
17.008	249.955	126.667	228.00	0.027508	68.602	9.1708	36.353	0.014577	0.10904	0.7884		88.73	
17.011	250.000	126.670	228.01	0.027508	68.600	9.1705	36.354	0.014577	0.10905	0.7883		88.73	
17.293	254.132	127.000	228.60	0.027427	68.400	9.1438	36.460	0.014620	0.10936	0.7860		88.47	
17.352	255.000	127.069	228.72	0.027410	68.358	9.1382	36.482	0.014629	0.10943	0.7855		88.41	
17.484	256.944	127.222	229.00	0.027373	68.264	9.1256	36.533	0.014649	0.10958	0.7845		88.29	
17.692	260.000	127.462	229.43	0.027314	68.117	9.1060	36.611	0.014681	0.10982	0.7828		88.10	
17.969	264.071	127.778	230.00	0.027236	67.922	9.0799	36.717	0.014723	0.11013	0.7805		87.85	
18.000	264.528	127.813	230.06	0.027227	67.900	9.0770	36.728	0.014727	0.11017	0.7803		87.82	
18.032	265.000	127.849	230.13	0.027218	67.878	9.0739	36.741	0.014732	0.11021	0.7800		87.79	
18.166	266.962	128.000	230.40	0.027180	67.784	9.0614	36.791	0.014753	0.11036	0.7790		87.67	
18.372	270.000	128.232	230.82	0.027122	67.639	9.0421	36.870	0.014784	0.11059	0.7773		87.48	
18.463	271.339	128.333	231.00	0.027097	67.576	9.0336	36.905	0.014798	0.11070	0.7766		87.40	
18.713	275.000	128.609	231.50	0.027027	67.402	9.0104	37.000	0.014836	0.11098	0.7746		87.18	
18.968	278.750	128.889	232.00	0.026956	67.225	8.9867	37.097	0.014875	0.11128	0.7725		86.95	
19.000	279.224	128.924	232.06	0.026947	67.202	8.9837	37.110	0.014880	0.11131	0.7723		86.92	
19.053	280.000	128.982	232.17	0.026932	67.166	8.9788	37.130	0.014889	0.11137	0.7718		86.87	
19.070	280.249	129.000	232.20	0.026928	67.154	8.9772	37.137	0.014891	0.11139	0.7717		86.86	
19.393	285.000	129.349	232.83	0.026839	66.931	8.9473	37.261	0.014941	0.11177	0.7691		86.57	
19.482	286.305	129.444	233.00	0.026813	66.869	8.9391	37.295	0.014955	0.11187	0.7684		86.49	
19.733	290.000	129.712	233.48	0.026744	66.696	8.9160	37.392	0.014993	0.11216	0.7664		86.26	
20.000	293.920	129.994	233.99	0.026671	66.513	8.8915	37.495	0.015035	0.11247	0.7643		86.03	
20.006	294.006	130.000	234.00	0.026669	66.509	8.8909	37.497	0.015036	0.11247	0.7643		86.02	
20.073	295.000	130.071	234.13	0.026650	66.463	8.8848	37.523	0.015046	0.11255	0.7638		85.96	
20.414	300.000	130.425	234.77	0.026557	66.230	8.8536	37.655	0.015099	0.11295	0.7611		85.66	
20.540	301.856	130.556	235.00	0.026522	66.143	8.8421	37.704	0.015119	0.11310	0.7601		85.55	
20.754	305.000	130.775	235.40	0.026464	65.998	8.8226	37.787	0.015152	0.11335	0.7584		85.36	
20.975	308.243	131.000	235.80	0.026404	65.847	8.8025	37.874	0.015187	0.11360	0.7567		85.17	
21.000	308.616	131.026	235.85	0.026397	65.830	8.8002	37.884	0.015191	0.11363	0.7565		85.14	
21.084	309.855	131.111	236.00	0.026374	65.773	8.7925	37.917	0.015204	0.11373	0.7558		85.07	
21.094	310.000	131.121	236.02	0.026371	65.766	8.7916	37.920	0.015205	0.11374	0.7558		85.06	
21.434	315.000	131.463	236.63	0.026278	65.535	8.7608	38.054	0.015259	0.11415	0.7531		84.76	
21.639	318.006	131.667	237.00	0.026223	65.396	8.7422	38.135	0.015291	0.11439	0.7515		84.58	
21.775	320.000	131.801	237.24	0.026186	65.304	8.7299	38.188	0.015313	0.11455	0.7505		84.46	

TABLE 11 CONTINUED

SATURATED LIQUID ARGON

PRESSURE		TEMPERATURE		DENSITY		LB/GAL	CM ³ /GRAM-MOLE	VOLUME		GAL/LB	LIQ VOLUME CORRECTION FACTOR		DENSITY RATIO	
ATM	PSIA	KELVIN	RANKINE	GRAM-MOLE/CM ³	LB/FT ³			FT ³ /LB	CM ³ /GRAM-MOLE				NTP (70°F)	VOLUME CORRECTION FACTOR*
21.977	322.971	132.000	237.60	0.026131	65.168	8.7117	38.268	0.015345	38.268	0.11479	0.7489		84.29	
22.000	323.312	132.023	237.64	0.026125	65.152	8.7096	38.278	0.015349	38.278	0.11482	0.7487		84.27	
22.115	325.000	132.135	237.84	0.026094	65.074	8.6992	38.323	0.015367	38.323	0.11495	0.7478		84.17	
22.204	326.311	132.222	238.00	0.026070	65.014	8.6911	38.359	0.015381	38.359	0.11506	0.7471		84.09	
22.455	330.000	132.466	238.44	0.026002	64.845	8.6685	38.459	0.015421	38.459	0.11536	0.7452		83.87	
22.780	334.772	132.778	239.00	0.025914	64.626	8.6392	38.589	0.015474	38.589	0.11575	0.7427		83.59	
22.795	335.000	132.793	239.03	0.025910	64.615	8.6378	38.596	0.015476	38.596	0.11577	0.7425		83.57	
23.000	338.008	132.988	239.38	0.025854	64.478	8.6194	38.678	0.015509	38.678	0.11602	0.7410		83.39	
23.013	338.201	133.000	239.40	0.025851	64.469	8.6182	38.683	0.015511	38.683	0.11603	0.7409		83.38	
23.136	340.000	133.116	239.61	0.025818	64.386	8.6072	38.733	0.015531	38.733	0.11618	0.7399		83.28	
23.366	343.391	133.333	240.00	0.025756	64.231	8.5864	38.827	0.015569	38.827	0.11646	0.7381		83.08	
23.476	345.000	133.436	240.18	0.025726	64.157	8.5766	38.871	0.015587	38.871	0.11660	0.7373		82.98	
23.816	350.000	133.752	240.75	0.025634	63.929	8.5460	39.010	0.015642	39.010	0.11701	0.7346		82.68	
23.964	352.170	133.889	241.00	0.025594	63.829	8.5327	39.071	0.015667	39.071	0.11720	0.7335		82.56	
24.000	352.704	133.922	241.06	0.025585	63.805	8.5295	39.086	0.015673	39.086	0.11724	0.7332		82.52	
24.084	353.945	134.000	241.20	0.025562	63.748	8.5219	39.121	0.015687	39.121	0.11734	0.7326		82.45	
24.156	355.000	134.066	241.32	0.025543	63.700	8.5154	39.150	0.015699	39.150	0.11743	0.7320		82.39	
24.496	360.000	134.376	241.88	0.025451	63.471	8.4849	39.291	0.015755	39.291	0.11786	0.7294		82.09	
24.572	361.111	134.444	242.00	0.025431	63.420	8.4781	39.323	0.015768	39.323	0.11795	0.7288		82.03	
24.837	365.000	134.683	242.63	0.025359	63.243	8.4543	39.433	0.015812	39.433	0.11828	0.7268		81.80	
25.000	367.400	134.829	242.69	0.025315	63.133	8.4396	39.502	0.015840	39.502	0.11849	0.7255		81.66	
25.177	370.000	134.987	242.98	0.025267	63.014	8.4237	39.577	0.015870	39.577	0.11871	0.7241		81.50	
25.192	370.217	135.000	243.00	0.025264	63.004	8.4224	39.583	0.015872	39.583	0.11873	0.7240		81.49	
25.517	375.000	135.288	243.52	0.025176	62.785	8.3931	39.721	0.015927	39.721	0.11914	0.7215		81.21	
25.823	379.489	135.556	244.00	0.025093	62.579	8.3655	39.851	0.015980	39.851	0.11954	0.7191		80.94	
25.857	380.000	135.586	244.05	0.025084	62.556	8.3625	39.866	0.015986	39.866	0.11958	0.7189		80.91	
26.000	382.096	135.710	244.28	0.025045	62.460	8.3497	39.928	0.016010	39.928	0.11977	0.7178		80.73	
26.198	385.000	135.881	244.59	0.024992	62.327	8.3319	40.013	0.016045	40.013	0.12002	0.7162		80.61	
26.336	387.028	136.000	244.80	0.024955	62.234	8.3194	40.073	0.016069	40.073	0.12020	0.7152		80.49	
26.465	388.929	136.111	245.00	0.024920	62.146	8.3077	40.129	0.016091	40.129	0.12037	0.7142		80.38	
26.538	390.000	136.173	245.11	0.024900	62.097	8.3012	40.161	0.016104	40.161	0.12047	0.7136		80.32	
26.878	395.000	136.463	245.63	0.024808	61.867	8.2704	40.310	0.016164	40.310	0.12091	0.7110		80.02	
27.000	396.792	136.566	245.82	0.024775	61.784	8.2594	40.364	0.016185	40.364	0.12107	0.7100		79.91	
27.119	398.541	136.667	246.00	0.024742	61.704	8.2486	40.417	0.016206	40.417	0.12123	0.7091		79.81	
27.218	400.000	136.750	246.15	0.024715	61.637	8.2396	40.461	0.016224	40.461	0.12137	0.7083		79.72	
27.517	404.391	137.000	246.60	0.024634	61.434	8.2125	40.594	0.016278	40.594	0.12177	0.7060		79.46	
27.559	405.000	137.034	246.66	0.024623	61.406	8.2087	40.613	0.016285	40.613	0.12182	0.7059		79.42	
27.785	408.326	137.222	247.00	0.024561	61.252	8.1882	40.715	0.016326	40.715	0.12213	0.7039		79.22	
27.899	410.000	137.316	247.17	0.024530	61.174	8.1778	40.767	0.016347	40.767	0.12228	0.7030		79.12	
28.000	411.488	137.400	247.32	0.024502	61.105	8.1686	40.813	0.016365	40.813	0.12242	0.7022		79.03	
28.239	415.000	137.596	247.67	0.024437	60.942	8.1468	40.922	0.016409	40.922	0.12275	0.7003		78.82	
28.463	418.287	137.778	248.00	0.024375	60.789	8.1263	41.025	0.016450	41.025	0.12306	0.6986		78.62	
28.579	420.000	137.872	248.17	0.024343	60.709	8.1157	41.079	0.016472	41.079	0.12322	0.6976		78.52	
28.737	422.321	138.000	248.40	0.024300	60.601	8.1012	41.152	0.016501	41.152	0.12344	0.6964		78.38	
28.919	425.000	138.147	248.66	0.024250	60.476	8.0844	41.238	0.016536	41.238	0.12369	0.6950		78.22	

TABLE 11 CONTINUED

SATURATED LIQUID ARGON

PRESSURE		TEMPERATURE		DENSITY		VOLUME		LIQ VOLUME CORRECTION FACTOR		DENSITY RATIO	
ATM	PSIA	KELVIN	RANKINE	GRAM-MOLE/ CM ³	LB/FT ³	LB/GAL	CM ³ / GRAM-MOLE	FT ³ /LB	GAL/LB	NTP (70°F) CORRECTION FACTOR	VOLUME CORRECTION FACTOR*
29.000	426.184	138.211	248.78	0.024228	60.420	8.0770	41.275	0.016551	0.12381	0.6943	78.15
29.153	428.425	138.333	249.00	0.024185	60.315	8.0630	41.347	0.016580	0.12402	0.6931	78.01
29.260	430.000	138.419	249.15	0.024156	60.241	8.0531	41.398	0.016600	0.12418	0.6923	77.92
29.600	435.000	138.688	249.64	0.024061	60.006	8.0217	41.560	0.016665	0.12466	0.6896	77.61
29.855	438.745	138.889	250.00	0.023991	59.829	7.9980	41.683	0.016714	0.12503	0.6875	77.38
29.940	440.000	138.956	250.12	0.023967	59.770	7.9901	41.724	0.016731	0.12515	0.6869	77.31
29.997	440.831	139.000	250.20	0.023951	59.731	7.9848	41.752	0.016742	0.12524	0.6864	77.25
30.000	440.880	139.003	250.20	0.023950	59.728	7.9845	41.754	0.016742	0.12524	0.6854	77.25
30.280	445.000	139.221	250.60	0.023872	59.533	7.9584	41.891	0.016797	0.12565	0.6841	77.00
30.569	449.247	139.444	251.00	0.023791	59.331	7.9313	42.034	0.016855	0.12608	0.6818	76.74
30.621	450.000	139.484	251.07	0.023776	59.295	7.9265	42.059	0.016865	0.12616	0.6814	76.69
30.961	455.000	139.745	251.54	0.023680	59.055	7.8945	42.230	0.016933	0.12667	0.6786	76.38
31.000	455.575	139.775	251.59	0.023669	59.028	7.8908	42.249	0.016941	0.12673	0.6783	76.35
31.297	459.935	140.000	252.00	0.023585	58.818	7.8628	42.400	0.017002	0.12718	0.6759	76.07
31.301	460.000	140.003	252.01	0.023584	58.814	7.8623	42.402	0.017003	0.12719	0.6759	76.07
31.641	465.000	140.260	252.47	0.023487	58.572	7.8300	42.578	0.017073	0.12771	0.6731	75.76
31.981	470.000	140.514	252.93	0.023389	58.329	7.7974	42.755	0.017144	0.12825	0.6703	75.44
32.000	470.272	140.528	252.95	0.023384	58.316	7.7957	42.765	0.017148	0.12828	0.6701	75.42
32.037	470.812	140.556	253.00	0.023373	58.289	7.7921	42.784	0.017156	0.12833	0.6698	75.39
32.322	475.000	140.767	253.38	0.023291	58.084	7.7647	42.936	0.017216	0.12879	0.6675	75.12
32.638	479.650	141.000	253.80	0.023199	57.855	7.7340	43.106	0.017285	0.12930	0.6648	74.83
32.662	480.000	141.018	253.83	0.023191	57.836	7.7315	43.120	0.017290	0.12934	0.6646	74.80
32.790	481.879	141.111	254.00	0.023154	57.744	7.7193	43.188	0.017318	0.12955	0.6636	74.69
33.000	484.968	141.264	254.28	0.023093	57.590	7.6987	43.304	0.017364	0.12989	0.6618	74.49
33.002	485.000	141.267	254.28	0.023092	57.588	7.6983	43.306	0.017365	0.12990	0.6618	74.48
33.342	490.000	141.514	254.72	0.022991	57.337	7.6649	43.495	0.017441	0.13047	0.6589	74.16
33.556	493.140	141.667	255.00	0.022928	57.181	7.6439	43.614	0.017488	0.13082	0.6571	73.96
33.683	495.000	141.758	255.17	0.022890	57.085	7.6312	43.687	0.017518	0.13104	0.6560	73.83
34.000	499.664	141.984	255.57	0.022796	56.850	7.5997	43.868	0.017590	0.13158	0.6533	73.53
34.022	499.991	142.000	255.60	0.022789	56.833	7.5974	43.881	0.017595	0.13162	0.6531	73.51
34.023	500.000	142.001	255.60	0.022788	56.831	7.5972	43.882	0.017596	0.13163	0.6531	73.50
34.336	504.597	142.222	256.00	0.022694	56.597	7.5659	44.064	0.017669	0.13217	0.6504	73.20
34.363	505.000	142.242	256.04	0.022685	56.575	7.5629	44.081	0.017676	0.13222	0.6501	73.17
34.703	510.000	142.482	256.47	0.022582	56.316	7.5284	44.284	0.017757	0.13283	0.6472	72.84
35.000	514.360	142.688	256.84	0.022491	56.090	7.4981	44.462	0.017829	0.13337	0.6446	72.55
35.044	515.000	142.719	256.89	0.022477	56.055	7.4934	44.490	0.017840	0.13345	0.6442	72.50
35.129	516.254	142.778	257.00	0.022451	55.990	7.4848	44.541	0.017860	0.13360	0.6434	72.42
35.384	520.000	142.955	257.32	0.022371	55.791	7.4582	44.700	0.017924	0.13408	0.6411	72.16
35.450	520.974	143.000	257.40	0.022351	55.741	7.4515	44.740	0.017940	0.13420	0.6406	72.09
35.724	525.000	143.189	257.74	0.022264	55.525	7.4226	44.915	0.018010	0.13472	0.6381	71.81
35.936	528.114	143.333	258.00	0.022198	55.359	7.4004	45.049	0.018064	0.13513	0.6362	71.60
36.000	529.056	143.377	258.08	0.022177	55.308	7.3936	45.091	0.018081	0.13525	0.6356	71.53
36.064	530.000	143.422	258.16	0.022156	55.255	7.3866	45.134	0.018098	0.13538	0.6350	71.47
36.404	535.000	143.652	258.57	0.022047	54.983	7.3501	45.357	0.018188	0.13605	0.6318	71.11
36.745	540.000	143.882	258.99	0.021937	54.707	7.3133	45.586	0.018279	0.13674	0.6287	70.76

TABLE 11 CONTINUED

SATURATED LIQUID ARGON

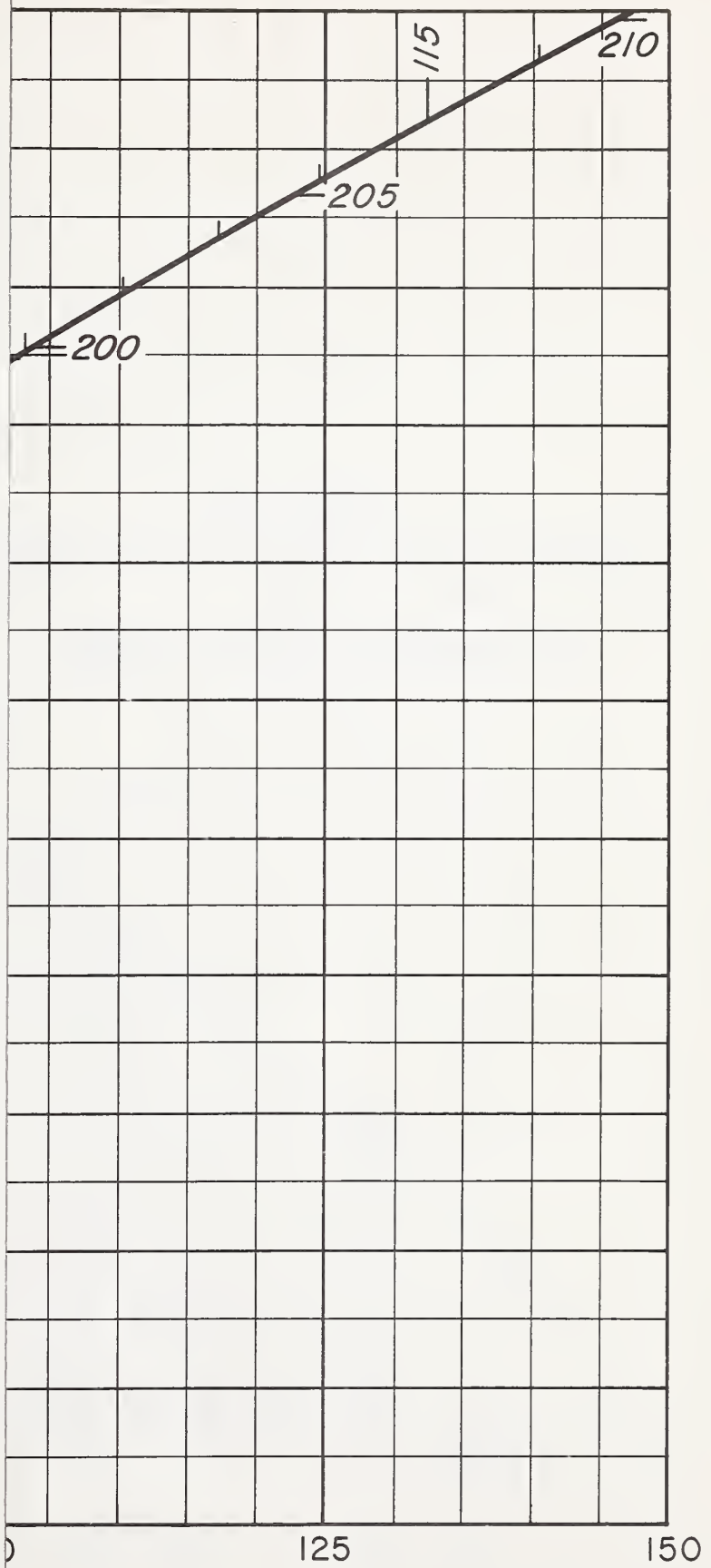
ATM	PSIA	TEMPERATURE		DENSITY GRAM-MOLE/ CM ³	LB/FT ³	LB/GAL	CM ³ / GRAM-MOLE	VOLUME FT ³ /LB	GAL/LB	LIQ VOLUME CORRECTION FACTOR	DENSITY RATIO	
		KELVIN	RANKINE								NTP (70°F)	VOLUME CORRECTION FACTOR*
36.757	540.179	143.889	259.00	0.021933	54.699	7.3121	45.593	0.018282	0.13676	0.5286	70.75	
36.923	542.616	144.000	259.20	0.021879	54.563	7.2940	45.706	0.018328	0.13710	0.6270	70.57	
37.000	543.752	144.052	259.29	0.021853	54.499	7.2855	45.760	0.018349	0.13726	0.6263	70.49	
37.085	545.003	144.109	259.40	0.021825	54.428	7.2759	45.820	0.018373	0.13744	0.6255	70.40	
37.425	550.000	144.335	259.80	0.021711	54.145	7.2381	46.059	0.018469	0.13816	0.6222	70.03	
37.592	552.452	144.444	260.00	0.021656	54.006	7.2196	46.178	0.018516	0.13851	0.6206	69.85	
37.765	555.000	144.559	260.21	0.021596	53.858	7.1997	46.305	0.018567	0.13889	0.6189	69.66	
38.000	558.448	144.712	260.48	0.021516	53.659	7.1732	46.476	0.018636	0.13941	0.6166	69.40	
38.106	560.000	144.782	260.61	0.021479	53.567	7.1608	46.556	0.018668	0.13965	0.6156	69.28	
38.442	564.937	145.000	261.00	0.021363	53.276	7.1220	46.810	0.018770	0.14041	0.6122	68.91	
38.446	565.000	145.004	261.01	0.021361	53.271	7.1213	46.815	0.018772	0.14042	0.6122	68.90	
38.786	570.000	145.223	261.40	0.021240	52.971	7.0812	47.080	0.018878	0.14122	0.6087	68.51	
39.000	573.144	145.360	261.65	0.021164	52.781	7.0558	47.250	0.018946	0.14173	0.6065	68.27	
39.126	575.000	145.442	261.80	0.021118	52.665	7.0403	47.353	0.018988	0.14204	0.6052	68.12	
39.306	577.637	145.556	262.00	0.021053	52.503	7.0187	47.499	0.019046	0.14248	0.6034	67.91	
39.467	580.000	145.659	262.19	0.020993	52.354	6.9987	47.635	0.019101	0.14288	0.6016	67.71	
39.807	585.000	145.874	262.57	0.020866	52.037	6.9564	47.925	0.019217	0.14375	0.5980	67.30	
40.000	587.840	145.995	262.79	0.020793	51.856	6.9322	48.092	0.019284	0.14426	0.5959	67.07	
40.008	587.954	146.000	262.80	0.020790	51.849	6.9312	48.099	0.019287	0.14428	0.5958	67.06	
40.147	590.000	146.088	262.96	0.020736	51.714	6.9131	48.224	0.019337	0.14465	0.5943	66.89	
40.185	590.555	146.111	263.00	0.020723	51.679	6.9085	48.257	0.019350	0.14475	0.5939	66.84	
40.487	595.000	146.301	263.34	0.020604	51.384	6.8690	48.534	0.019461	0.14558	0.5905	66.46	
40.827	600.000	146.512	263.72	0.020469	51.046	6.8239	48.855	0.019590	0.14654	0.5866	66.02	
41.000	602.536	146.618	263.91	0.020400	50.874	6.8009	49.021	0.019656	0.14704	0.5846	65.80	
41.079	603.695	146.667	264.00	0.020367	50.794	6.7901	49.098	0.019688	0.14727	0.5837	65.70	
41.168	605.000	146.722	264.10	0.020330	50.701	6.7777	49.188	0.019724	0.14754	0.5826	65.58	
41.508	610.000	146.931	264.48	0.020188	50.347	6.7303	49.534	0.019862	0.14858	0.5786	65.12	
41.623	611.686	147.000	264.60	0.020140	50.227	6.7144	49.652	0.019910	0.14893	0.5772	64.96	
41.848	615.000	147.138	264.85	0.020042	49.983	6.6817	49.895	0.020007	0.14966	0.5744	64.65	
41.988	617.060	147.222	265.00	0.019982	49.832	6.6616	50.046	0.020067	0.15011	0.5727	64.45	
42.000	617.232	147.229	265.01	0.019977	49.819	6.6599	50.058	0.020073	0.15015	0.5725	64.44	
42.188	620.000	147.344	265.22	0.019892	49.609	6.6317	50.271	0.020158	0.15079	0.5701	64.16	
42.529	625.000	147.549	265.59	0.019738	49.223	6.5802	50.665	0.020316	0.15197	0.5657	63.66	
42.869	630.000	147.752	265.95	0.019578	48.825	6.5269	51.078	0.020481	0.15321	0.5611	63.15	
42.913	630.654	147.778	266.00	0.019558	48.774	6.5202	51.131	0.020503	0.15337	0.5605	63.08	
43.000	631.928	147.829	266.09	0.019516	48.670	6.5063	51.240	0.020546	0.15370	0.5593	62.95	
43.209	635.000	147.954	266.32	0.019413	48.413	6.4719	51.513	0.020656	0.15452	0.5563	62.62	
43.288	636.156	148.000	266.40	0.019375	48.318	6.4592	51.614	0.020696	0.15482	0.5553	62.49	
43.549	640.000	148.155	266.68	0.019241	47.985	6.4147	51.972	0.020840	0.15589	0.5514	62.06	
43.854	644.480	148.333	267.00	0.019083	47.590	6.3618	52.404	0.021013	0.15719	0.5469	61.55	
43.889	645.000	148.355	267.04	0.019063	47.540	6.3551	52.459	0.021035	0.15735	0.5463	61.49	
44.000	646.624	148.419	267.15	0.019004	47.394	6.3356	52.620	0.021100	0.15784	0.5446	61.30	
44.230	650.000	148.553	267.40	0.018876	47.074	6.2929	52.977	0.021243	0.15891	0.5410	60.89	
44.570	655.000	148.750	267.75	0.018680	46.586	6.2277	53.533	0.021466	0.16057	0.5354	60.25	
44.811	658.543	148.889	268.00	0.018537	46.228	6.1798	53.947	0.021632	0.16182	0.5312	59.79	

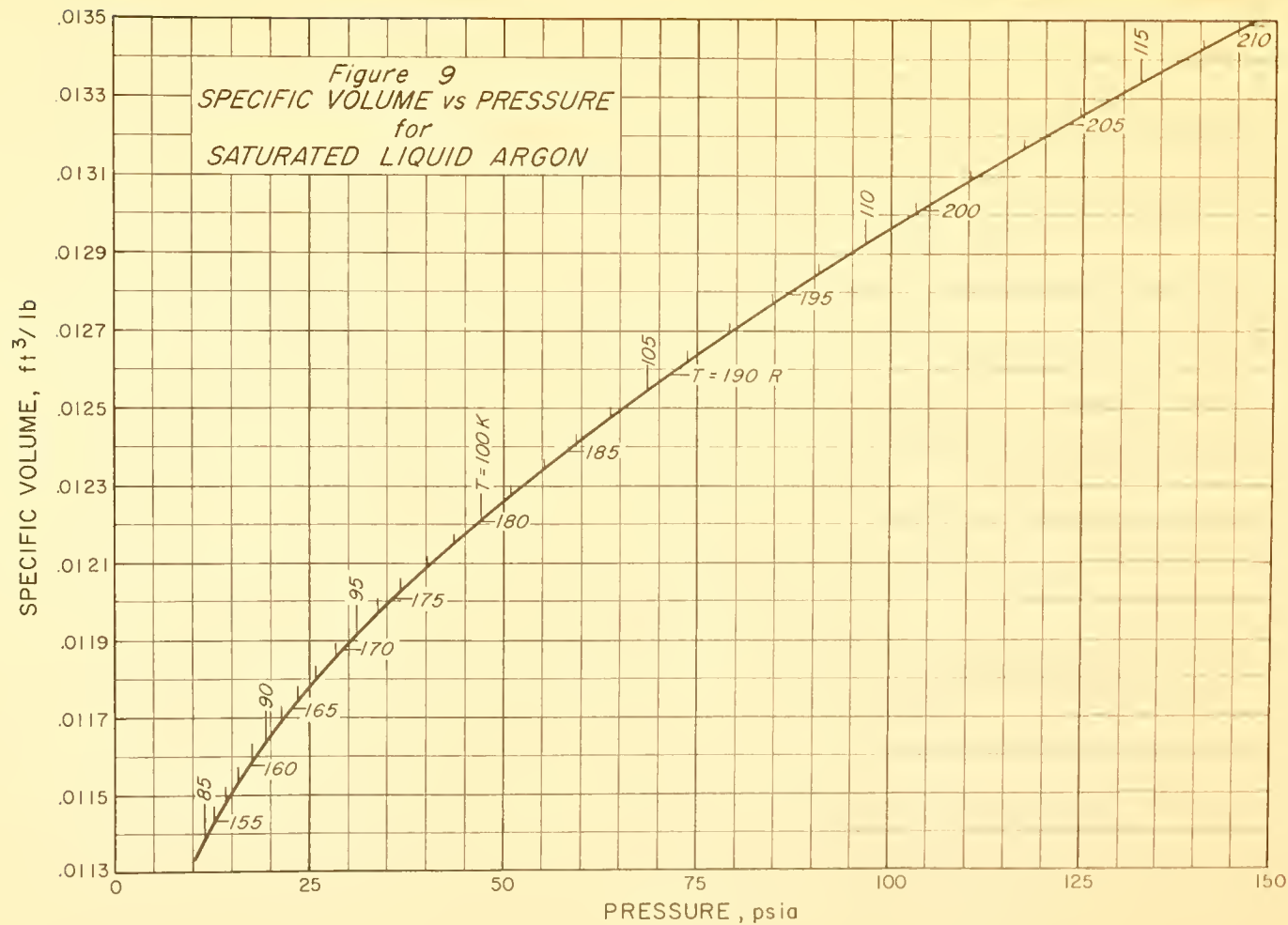
TABLE 11 CONTINUED

SATURATED LIQUID ARGON

PRESSURE			TEMPERATURE		DENSITY		VOLUME		LIQ VOLUME CORRECTION FACTOR	DENSITY RATIO	
ATM	PSIA	KELVIN	RANKINE	GRAM-MOLE/ CM ³	LB/FT ³	LB/GAL	CM ³ / GRAM-MOLE	FT ³ /LB		GAL/LB	NTP (70°F) CORRECTION FACTOR*
44.910	660.000	148.946	268.10	0.018474	46.072	6.1589	54.130	0.021705	0.16237	0.5294	59.59
45.000	661.320	148.997	268.20	0.018419	45.934	6.1405	54.292	0.021770	0.16285	0.5279	59.41
45.004	661.384	149.000	268.20	0.018416	45.928	6.1396	54.300	0.021773	0.16288	0.5278	59.40
45.250	665.000	149.141	268.45	0.018255	45.526	6.0860	54.779	0.021965	0.16431	0.5232	58.88
45.591	670.000	149.335	268.80	0.018022	44.944	6.0082	55.488	0.022250	0.16644	0.5165	58.13
45.784	672.846	149.444	269.00	0.017883	44.598	5.9619	55.919	0.022422	0.16773	0.5125	57.68
45.931	675.000	149.528	269.15	0.017771	44.318	5.9244	56.272	0.022564	0.16879	0.5093	57.32
46.000	676.016	149.566	269.22	0.017719	44.189	5.9072	56.436	0.022630	0.16928	0.5078	57.15
46.271	680.000	149.719	269.49	0.017497	43.636	5.8333	57.151	0.022917	0.17143	0.5015	56.44
46.611	685.000	149.910	269.84	0.017196	42.884	5.7328	58.154	0.023319	0.17444	0.4928	55.47
46.774	687.394	150.000	270.00	0.017042	42.500	5.6814	58.680	0.023530	0.17601	0.4884	54.97
46.952	690.000	150.099	270.18	0.016856	42.037	5.6196	59.325	0.023788	0.17795	0.4831	54.37
47.000	690.712	150.125	270.23	0.016807	41.915	5.6033	59.498	0.023858	0.17847	0.4817	54.21
47.592	695.000	150.287	270.52	0.016463	41.056	5.4884	60.743	0.024357	0.18220	0.4718	53.10
47.632	700.000	150.474	270.85	0.015984	39.863	5.3289	62.561	0.025086	0.18766	0.4581	51.56
47.781	702.190	150.556	271.00	0.015739	39.251	5.2471	63.536	0.025477	0.19058	0.4511	50.77
47.972	705.000	150.661	271.19	0.015342	38.261	5.1148	65.180	0.026136	0.19551	0.4397	49.49
48.000	705.408	150.675	271.22	0.015287	38.124	5.0964	65.415	0.026230	0.19622	0.4381	49.31
48.312	710.000	150.846	271.52	0.013957	34.807	4.6530	71.649	0.028730	0.21492	0.4000	45.02
48.340	710.405	150.860	271.55	0.013412	33.449	4.4714	74.558	0.029897	0.22364	0.3844	43.26

SPECIFIC VOLUME, ft^3/lb





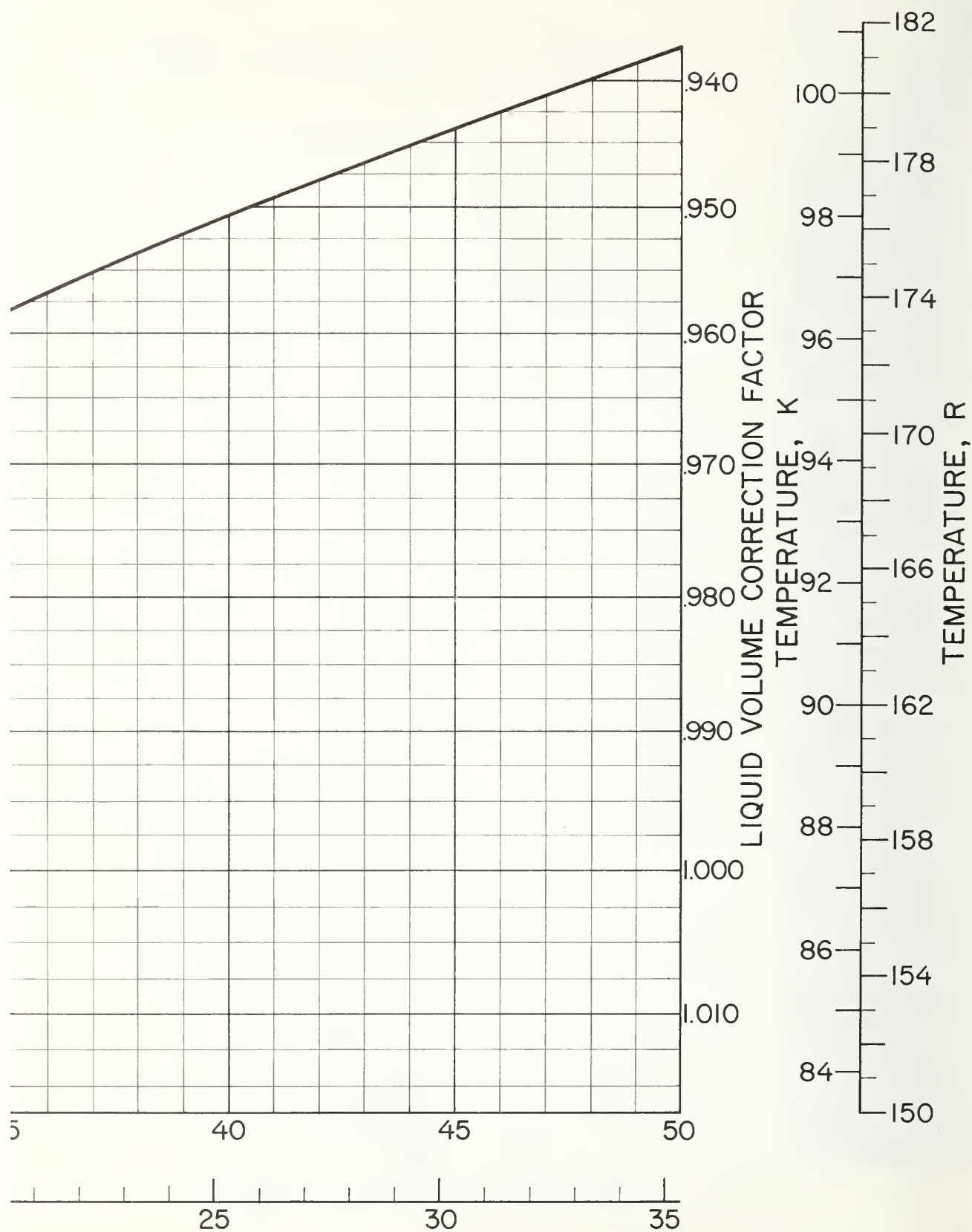


TABLE 12

DENSITY OF COMPRESSED LIQUID ARGON

TABLE ENTRIES													
1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA				1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL									
PSIA ATM.	12.000 0.817	14.696 1.000	25.000 1.701	50.000 3.402	75.000 5.103	100.000 6.805	150.000 10.207	200.000 13.609	250.000 17.011	300.000 20.414	350.000 23.816	400.000 27.218	450.000 30.621
85.0 153.00 11.455	1.0098 113.66 11.7473	1.0099 113.66 11.7478	1.0100 113.68 11.7495	1.0104 113.72 11.7538	1.0108 113.76 11.7580	1.0111 113.80 11.7622	1.0118 113.88 11.7706	1.0126 113.97 11.7790	1.0133 114.05 11.7873	1.0140 114.13 11.7955	1.0147 114.20 11.8037	1.0154 114.28 11.8118	1.0161 114.36 11.8199
85.1 153.18 11.584	1.0094 113.61 11.7423	1.0094 113.57 11.7428	1.0096 113.63 11.7446	1.0100 113.67 11.7488	1.0103 113.71 11.7531	1.0107 113.76 11.7573	1.0114 113.84 11.7657	1.0121 113.92 11.7741	1.0129 114.00 11.7824	1.0136 114.08 11.7906	1.0143 114.16 11.7989	1.0150 114.24 11.8070	1.0157 114.31 11.8151
85.2 153.36 11.714	1.0090 113.56 11.7374	1.0090 113.57 11.7378	1.0092 113.58 11.7396	1.0095 113.63 11.7439	1.0099 113.67 11.7481	1.0103 113.71 11.7524	1.0110 113.79 11.7608	1.0117 113.87 11.7692	1.0124 113.95 11.7775	1.0131 114.03 11.7858	1.0138 114.11 11.7940	1.0146 114.19 11.8022	1.0152 114.27 11.8103
85.3 153.54 11.846	1.0086 113.51 11.7324	1.0086 113.52 11.7329	1.0087 113.54 11.7346	1.0091 113.58 11.7389	1.0095 113.62 11.7432	1.0098 113.66 11.7474	1.0106 113.74 11.7559	1.0113 113.82 11.7643	1.0120 113.90 11.7726	1.0127 113.98 11.7809	1.0134 114.06 11.7891	1.0141 114.14 11.7973	1.0148 114.22 11.8055
85.4 153.72 11.978	1.0081 113.47 11.7274	1.0082 113.47 11.7279	1.0083 113.49 11.7286	1.0087 113.53 11.7339	1.0091 113.57 11.7382	1.0094 113.61 11.7425	1.0101 113.69 11.7509	1.0109 113.78 11.7594	1.0116 113.86 11.7677	1.0123 114.02 11.7760	1.0130 114.10 11.7843	1.0137 114.18 11.7925	1.0144 114.27 11.8006
85.5 153.90 12.112		1.0077 113.42 11.7229	1.0079 113.44 11.7247	1.0083 113.48 11.7290	1.0086 113.52 11.7332	1.0090 113.56 11.7375	1.0097 113.65 11.7460	1.0104 113.73 11.7544	1.0112 113.81 11.7628	1.0119 113.89 11.7711	1.0126 113.97 11.7794	1.0133 114.05 11.7876	1.0140 114.13 11.7958
85.6 154.08 12.247		1.0073 113.37 11.7179	1.0075 113.39 11.7197	1.0078 113.43 11.7240	1.0082 113.47 11.7283	1.0086 113.52 11.7325	1.0093 113.60 11.7411	1.0100 113.68 11.7495	1.0107 113.76 11.7579	1.0115 113.84 11.7663	1.0122 113.92 11.7745	1.0129 114.00 11.7828	1.0136 114.08 11.7910
85.7 154.26 12.393		1.0069 113.33 11.7129	1.0070 113.34 11.7147	1.0074 113.38 11.7190	1.0078 113.43 11.7233	1.0081 113.47 11.7276	1.0089 113.55 11.7361	1.0096 113.63 11.7446	1.0103 113.71 11.7530	1.0110 113.79 11.7614	1.0118 113.88 11.7697	1.0125 113.95 11.7779	1.0132 114.03 11.7861
85.8 154.44 12.520		1.0064 113.28 11.7079	1.0066 113.29 11.7097	1.0070 113.34 11.7140	1.0073 113.38 11.7183	1.0077 113.42 11.7226	1.0084 113.50 11.7312	1.0092 113.58 11.7396	1.0099 113.67 11.7481	1.0106 113.75 11.7565	1.0113 113.83 11.7648	1.0120 113.91 11.7731	1.0128 113.99 11.7813
85.9 154.62 12.658		1.0060 113.23 11.7029	1.0062 113.25 11.7047	1.0065 113.29 11.7090	1.0069 113.33 11.7133	1.0073 113.37 11.7176	1.0080 113.45 11.7262	1.0088 113.54 11.7347	1.0095 113.62 11.7431	1.0102 113.70 11.7515	1.0109 113.78 11.7599	1.0116 113.86 11.7682	1.0123 113.94 11.7764
86.0 154.80 12.798		1.0056 113.18 11.6979	1.0057 113.20 11.6997	1.0061 113.24 11.7040	1.0065 113.28 11.7083	1.0069 113.32 11.7126	1.0076 113.41 11.7212	1.0083 113.49 11.7297	1.0091 113.57 11.7382	1.0098 113.65 11.7466	1.0105 113.73 11.7550	1.0112 113.81 11.7633	1.0119 113.89 11.7715
86.1 154.98 12.938		1.0052 113.13 11.6928	1.0053 113.15 11.6946	1.0057 113.19 11.6990	1.0061 113.23 11.7033	1.0064 113.27 11.7076	1.0072 113.36 11.7162	1.0079 113.44 11.7248	1.0086 113.52 11.7333	1.0094 113.60 11.7417	1.0101 113.69 11.7501	1.0108 113.77 11.7584	1.0115 113.85 11.7667
86.2 155.16 13.080		1.0047 113.08 11.6878	1.0049 113.10 11.6896	1.0053 113.14 11.6940	1.0056 113.18 11.6983	1.0060 113.23 11.7026	1.0067 113.31 11.7113	1.0075 113.39 11.7198	1.0082 113.48 11.7283	1.0089 113.56 11.7368	1.0097 113.64 11.7452	1.0104 113.72 11.7535	1.0111 113.80 11.7618
86.3 155.34 13.223		1.0043 113.03 11.6828	1.0044 113.05 11.6846	1.0048 113.09 11.6890	1.0052 113.14 11.6933	1.0056 113.18 11.6976	1.0063 113.26 11.7063	1.0070 113.34 11.7149	1.0078 113.43 11.7234	1.0085 113.51 11.7318	1.0092 113.59 11.7403	1.0099 113.67 11.7486	1.0107 113.75 11.7569
86.4 155.52 13.367		1.0039 112.99 11.6777	1.0040 113.00 11.6795	1.0044 113.05 11.6839	1.0048 113.09 11.6883	1.0051 113.13 11.6926	1.0059 113.21 11.7013	1.0066 113.30 11.7099	1.0074 113.38 11.7184	1.0081 113.46 11.7269	1.0088 113.54 11.7353	1.0095 113.62 11.7437	1.0102 113.70 11.7520
86.5 155.70 13.513		1.0034 112.94 11.6727	1.0036 112.95 11.6745	1.0040 113.00 11.6789	1.0043 113.04 11.6833	1.0047 113.08 11.6876	1.0054 113.17 11.6963	1.0062 113.25 11.7049	1.0069 113.33 11.7135	1.0077 113.41 11.7220	1.0084 113.50 11.7304	1.0091 113.58 11.7388	1.0098 113.66 11.7471
86.6 155.88 13.660		1.0030 112.89 11.6676	1.0031 112.91 11.6694	1.0035 112.95 11.6739	1.0039 112.99 11.6782	1.0043 113.03 11.6826	1.0050 113.12 11.6913	1.0058 113.20 11.6999	1.0065 113.28 11.7085	1.0072 113.37 11.7170	1.0080 113.45 11.7255	1.0087 113.53 11.7339	1.0094 113.61 11.7422
86.7 156.06 13.807		1.0026 112.84 11.6626	1.0027 112.86 11.6644	1.0031 112.90 11.6688	1.0035 112.94 11.6732	1.0038 112.98 11.6776	1.0046 113.07 11.6863	1.0053 113.15 11.6949	1.0061 113.24 11.7035	1.0068 113.32 11.7121	1.0075 113.40 11.7205	1.0083 113.48 11.7290	1.0090 113.56 11.7373
86.8 156.24 13.957		1.0021 112.79 11.6575	1.0023 112.81 11.6593	1.0027 112.85 11.6638	1.0030 112.89 11.6681	1.0034 112.94 11.6725	1.0042 113.02 11.6813	1.0049 113.10 11.6899	1.0056 113.19 11.6985	1.0064 113.27 11.7071	1.0071 113.35 11.7156	1.0078 113.43 11.7240	1.0086 113.51 11.7324
86.9 156.42 14.107		1.0017 112.74 11.6524	1.0018 112.76 11.6543	1.0022 112.80 11.6587	1.0026 112.84 11.6631	1.0030 112.89 11.6675	1.0037 112.97 11.6762	1.0045 113.06 11.6849	1.0052 113.14 11.6936	1.0060 113.22 11.7021	1.0067 113.30 11.7106	1.0074 113.39 11.7191	1.0081 113.47 11.7275

Figure 10
LIQUID VOLUME CORRECTION FACTOR
for
SATURATED LIQUID ARGON

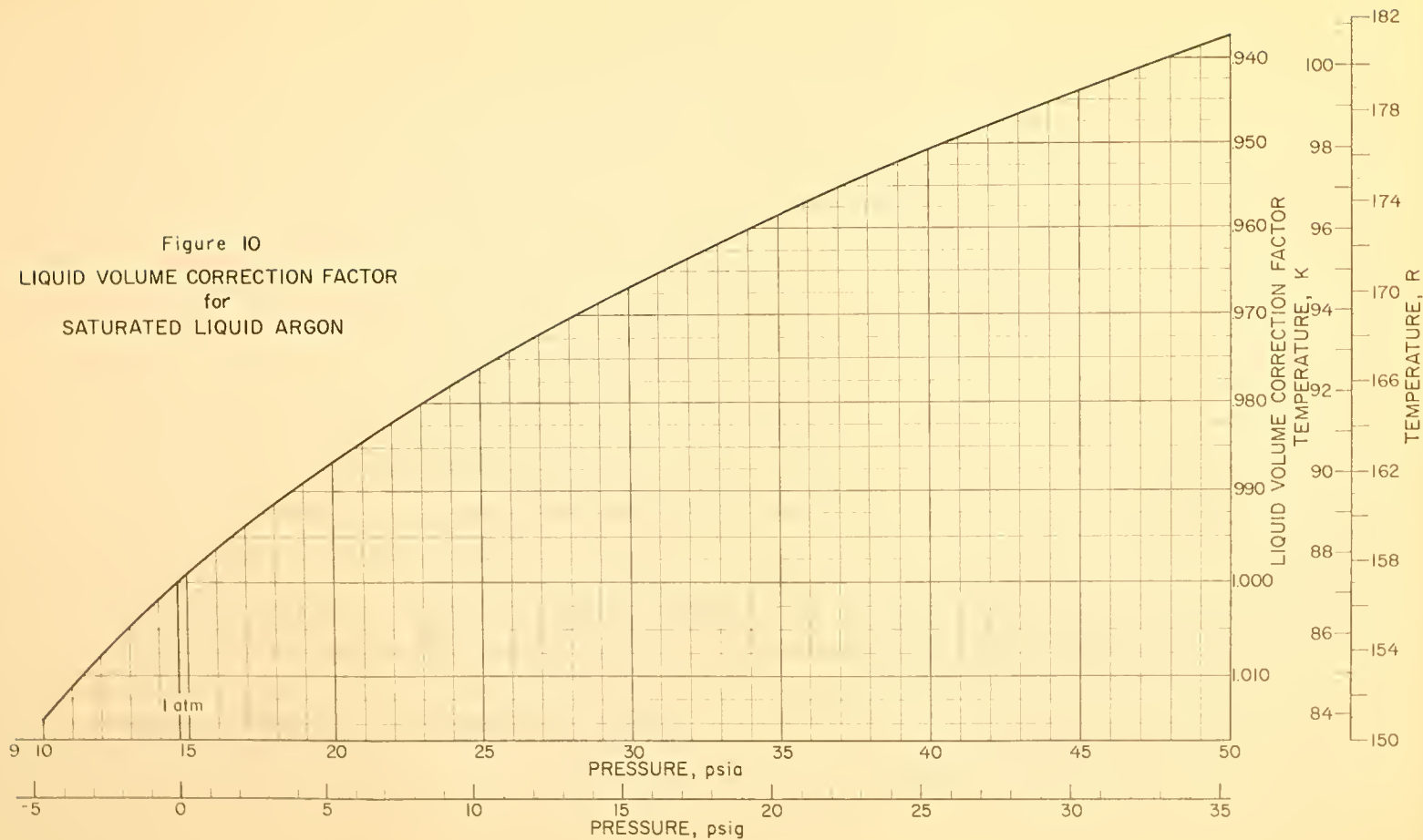


TABLE 12

DENSITY OF COMPRESSED LIQUID ARGON

	TABLE ENTRIES
1. TEMPERATURE, K	2. LIQUID VOLUME, CM ³

TABLE 12 - CONTINUED

DENSITY OF COMPRESSED LIQUID ARGON - CONTINUED

TABLE ENTRIES														
1. TEMPERATURE, K 2. TEMPERATURE, °R 3. VAPOR PRESSURE, PSIA			1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL											
PSIA	12.000	14.696	25.000	50.000	75.000	100.000	150.000	200.000	250.000	300.000	350.000	400.000	450.000	
ATM.	0.817	1.000	1.701	3.402	5.103	6.805	10.207	13.609	17.011	20.414	23.816	27.218	30.621	
87.0		1.0012	1.0014	1.0018	1.0022	1.0025	1.0033	1.0040	1.0048	1.0055	1.0063	1.0070	1.0077	
156.60		112.69	112.71	112.75	112.80	112.84	112.92	113.01	113.09	113.17	113.26	113.34	113.42	
14.259		11.6474	11.6492	11.6536	11.6580	11.6624	11.6712	11.6799	11.6886	11.6972	11.7057	11.7142	11.7226	
87.1		1.0008	1.0010	1.0013	1.0017	1.0021	1.0029	1.0036	1.0044	1.0051	1.0058	1.0066	1.0073	
156.78		112.64	112.66	112.70	112.75	112.79	112.87	112.96	113.04	113.13	113.21	113.29	113.37	
14.411		11.6423	11.6441	11.6485	11.6530	11.6574	11.6662	11.6749	11.6836	11.6922	11.7007	11.7092	11.7177	
87.2		1.0004	1.0005	1.0009	1.0013	1.0017	1.0024	1.0032	1.0039	1.0047	1.0054	1.0061	1.0069	
156.96		112.59	112.61	112.65	112.70	112.74	112.83	112.91	112.99	113.08	113.16	113.24	113.32	
14.566		11.6372	11.6390	11.6435	11.6479	11.6523	11.6611	11.6699	11.6786	11.6872	11.6958	11.7043	11.7127	
87.3			1.0001	1.0005	1.0009	1.0012	1.0020	1.0027	1.0035	1.0042	1.0050	1.0057	1.0064	
157.14			112.56	112.60	112.65	112.69	112.78	112.86	112.95	113.03	113.11	113.19	113.28	
14.721			11.6339	11.6384	11.6428	11.6473	11.6561	11.6649	11.6736	11.6822	11.6908	11.6993	11.7078	
87.4			0.9996	1.0000	1.0004	1.0008	1.0016	1.0023	1.0031	1.0038	1.0045	1.0053	1.0060	
157.32			112.51	112.56	112.60	112.64	112.73	112.81	112.90	112.98	113.06	113.15	113.23	
14.878			11.6288	11.6333	11.6378	11.6422	11.6510	11.6598	11.6686	11.6772	11.6858	11.6944	11.7029	
87.5			0.9992	0.9996	1.0000	1.0004	1.0011	1.0019	1.0026	1.0034	1.0041	1.0049	1.0056	
157.50			112.46	112.51	112.55	112.59	112.68	112.76	112.85	112.93	113.02	113.10	113.18	
15.036			11.6237	11.6282	11.6327	11.6371	11.6460	11.6548	11.6635	11.6722	11.6808	11.6894	11.6979	
87.6			0.9988	0.9992	0.9995	0.9999	1.0007	1.0014	1.0022	1.0029	1.0037	1.0044	1.0052	
157.68			112.41	112.46	112.50	112.54	112.63	112.71	112.80	112.88	112.97	113.05	113.13	
15.195			11.6186	11.6231	11.6276	11.6320	11.6409	11.6498	11.6585	11.6672	11.6759	11.6844	11.6930	
87.7			0.9983	0.9987	0.9991	0.9995	1.0003	1.0010	1.0018	1.0025	1.0033	1.0040	1.0047	
157.86			112.36	112.41	112.45	112.49	112.58	112.67	112.75	112.84	112.92	113.00	113.09	
15.355			11.6135	11.6180	11.6225	11.6270	11.6359	11.6447	11.6535	11.6622	11.6709	11.6795	11.6880	
87.8			0.9979	0.9983	0.9987	0.9991	0.9998	1.0006	1.0013	1.0021	1.0028	1.0036	1.0043	
158.04			112.31	112.36	112.40	112.45	112.53	112.62	112.70	112.79	112.87	112.95	113.04	
15.517			11.6084	11.6129	11.6174	11.6219	11.6308	11.6396	11.6484	11.6572	11.6659	11.6745	11.6831	
87.9			0.9975	0.9978	0.9982	0.9986	0.9994	1.0001	1.0009	1.0017	1.0024	1.0031	1.0039	
158.22			112.26	112.31	112.35	112.40	112.48	112.57	112.65	112.74	112.82	112.91	112.99	
15.680			11.6032	11.6078	11.6123	11.6168	11.6257	11.6346	11.6434	11.6522	11.6609	11.6695	11.6781	
88.0			0.9970	0.9974	0.9978	0.9982	0.9989	0.9997	1.0005	1.0012	1.0020	1.0027	1.0035	
158.40			112.22	112.26	112.30	112.35	112.43	112.52	112.60	112.69	112.77	112.86	112.94	
15.845			11.5981	11.6026	11.6072	11.6117	11.6206	11.6295	11.6384	11.6471	11.6559	11.6645	11.6731	
88.1			0.9966	0.9970	0.9973	0.9977	0.9985	0.9993	1.0000	1.0008	1.0015	1.0023	1.0030	
158.58			112.17	112.21	112.25	112.30	112.38	112.47	112.56	112.64	112.73	112.81	112.89	
16.010			11.5930	11.5975	11.6020	11.6066	11.6155	11.6245	11.6333	11.6421	11.6508	11.6595	11.6681	
88.2			0.9961	0.9965	0.9969	0.9973	0.9981	0.9988	0.9996	1.0004	1.0011	1.0019	1.0026	
158.76			112.12	112.16	112.20	112.25	112.33	112.42	112.51	112.59	112.68	112.76	112.84	
16.177			11.5878	11.5924	11.5969	11.6014	11.6104	11.6194	11.6283	11.6371	11.6458	11.6545	11.6632	
88.3			0.9957	0.9961	0.9965	0.9969	0.9976	0.9984	0.9992	0.9999	1.0007	1.0014	1.0022	
158.94			112.07	112.11	112.15	112.20	112.29	112.37	112.46	112.54	112.63	112.71	112.80	
16.346			11.5827	11.5872	11.5918	11.5963	11.6053	11.6143	11.6232	11.6320	11.6408	11.6495	11.6582	
88.4			0.9952	0.9956	0.9960	0.9964	0.9972	0.9980	0.9987	0.9995	1.0002	1.0010	1.0017	
159.12			112.02	112.06	112.10	112.15	112.24	112.32	112.41	112.49	112.58	112.66	112.75	
16.515			11.5775	11.5821	11.5866	11.5912	11.6002	11.6092	11.6181	11.6270	11.6358	11.6445	11.6532	
88.5			0.9948	0.9952	0.9956	0.9960	0.9968	0.9975	0.9983	0.9991	0.9998	1.0006	1.0013	
159.30			111.97	112.01	112.05	112.10	112.19	112.27	112.36	112.45	112.53	112.62	112.70	
16.687			11.5723	11.5769	11.5815	11.5861	11.5951	11.6041	11.6131	11.6219	11.6307	11.6395	11.6482	
88.6			0.9944	0.9947	0.9951	0.9955	0.9963	0.9971	0.9979	0.9986	0.9994	1.0001	1.0009	
159.48			111.92	111.96	112.00	112.05	112.14	112.22	112.31	112.40	112.48	112.57	112.65	
16.859			11.5672	11.5718	11.5764	11.5809	11.5900	11.5990	11.6080	11.6169	11.6257	11.6345	11.6432	
88.7			0.9939	0.9943	0.9947	0.9951	0.9959	0.9966	0.9974	0.9982	0.9989	0.9997	1.0005	
159.66			111.87	111.91	111.95	112.00	112.09	112.17	112.26	112.35	112.43	112.52	112.60	
17.033			11.5620	11.5666	11.5712	11.5758	11.5849	11.5939	11.6029	11.6118	11.6207	11.6294	11.6382	
88.8			0.9935	0.9939	0.9943	0.9946	0.9954	0.9962	0.9970	0.9978	0.9985	0.9993	1.0000	
159.84			111.82	111.86	111.90	111.95	112.04	112.13	112.21	112.30	112.38	112.47	112.55	
17.208			11.5568	11.5614	11.5660	11.5706	11.5798	11.5888	11.5978	11.6067	11.6156	11.6244	11.6332	
88.9			0.9930	0.9934	0.9938	0.9942	0.9950	0.9958	0.9965	0.9973	0.9981	0.9988	0.9996	
160.02			111.77	111.81	111.85	111.90	111.99	112.08	112.16	112.25	112.34	112.42	112.51	
17.384			11.5516	11.5563	11.5609	11.5655	11.5746	11.5837	11.5927	11.6017	11.6105	11.6194	11.6281	

TABLE 12 - CONTINUED

DENSITY OF COMPRESSED LIQUID ARGON - CONTINUED

		TABLE ENTRIES												
1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA		1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL												
PSIA	12.000 0.817	14.696 1.000	25.000 1.701	50.000 3.402	75.000 5.103	100.000 6.805	150.000 10.207	200.000 13.609	250.000 17.011	300.000 20.414	350.000 23.816	400.000 27.218	450.000 30.621	
89.0 160.20 17.562			0.9926 111.72 11.5464	0.9930 111.76 11.5511	0.9934 111.80 11.5557	0.9938 111.85 11.5603	0.9945 111.94 11.5695	0.9953 112.03 11.5786	0.9961 112.11 11.5876	0.9969 112.20 11.5966	0.9976 112.29 11.6055	0.9984 112.37 11.6143	0.9992 112.46 11.6231	
89.1 160.38 17.741			0.9921 111.66 11.5412	0.9925 111.71 11.5459	0.9929 111.75 11.5505	0.9933 111.80 11.5552	0.9941 111.89 11.5643	0.9949 111.98 11.5735	0.9957 112.06 11.5825	0.9964 112.15 11.5915	0.9972 112.24 11.6004	0.9980 112.32 11.6093	0.9987 112.41 11.6181	
89.2 160.56 17.922			0.9917 111.61 11.5360	0.9921 111.66 11.5407	0.9925 111.70 11.5453	0.9929 111.75 11.5500	0.9937 111.84 11.5592	0.9944 111.93 11.5683	0.9952 112.01 11.5774	0.9960 112.10 11.5864	0.9968 112.19 11.5953	0.9975 112.27 11.6042	0.9983 112.36 11.6131	
89.3 160.74 18.104			0.9912 111.56 11.5308	0.9916 111.61 11.5355	0.9920 111.65 11.5402	0.9924 111.70 11.5448	0.9932 111.79 11.5540	0.9940 111.88 11.5632	0.9948 111.97 11.5723	0.9956 112.05 11.5813	0.9963 112.14 11.5903	0.9971 112.23 11.5992	0.9979 112.31 11.6080	
89.4 160.92 18.288			0.9908 111.51 11.5256	0.9912 111.56 11.5303	0.9916 111.60 11.5350	0.9920 111.65 11.5396	0.9928 111.74 11.5489	0.9936 111.83 11.5580	0.9943 111.92 11.5672	0.9951 112.00 11.5762	0.9959 112.09 11.5852	0.9967 112.18 11.5941	0.9974 112.26 11.6030	
89.5 161.10 18.473			0.9903 111.46 11.5204	0.9907 111.51 11.5251	0.9911 111.55 11.5298	0.9915 111.60 11.5344	0.9923 111.69 11.5437	0.9931 111.78 11.5529	0.9939 111.87 11.5620	0.9947 111.95 11.5711	0.9955 112.04 11.5801	0.9962 112.13 11.5891	0.9970 112.21 11.5979	
89.6 161.28 18.659			0.9899 111.41 11.5152	0.9903 111.46 11.5199	0.9907 111.50 11.5246	0.9911 111.55 11.5292	0.9919 111.64 11.5385	0.9927 111.73 11.5478	0.9935 111.82 11.5569	0.9942 111.90 11.5660	0.9950 111.99 11.5750	0.9958 112.08 11.5840	0.9966 112.16 11.5929	
89.7 161.46 18.847			0.9894 111.36 11.5099	0.9898 111.41 11.5146	0.9902 111.45 11.5193	0.9906 111.50 11.5240	0.9914 111.59 11.5333	0.9922 111.68 11.5426	0.9930 111.77 11.5518	0.9938 111.85 11.5609	0.9946 111.94 11.5699	0.9954 112.03 11.5789	0.9961 112.12 11.5878	
89.8 161.64 19.036			0.9890 111.31 11.5047	0.9894 111.36 11.5094	0.9898 111.40 11.5141	0.9902 111.45 11.5188	0.9910 111.54 11.5282	0.9918 111.63 11.5374	0.9926 111.72 11.5466	0.9934 111.81 11.5558	0.9941 111.89 11.5648	0.9949 111.98 11.5738	0.9957 112.07 11.5828	
89.9 161.82 19.226			0.9885 111.26 11.4994	0.9889 111.31 11.5042	0.9893 111.35 11.5089	0.9897 111.40 11.5136	0.9905 111.49 11.5230	0.9913 111.58 11.5323	0.9921 111.67 11.5415	0.9929 111.76 11.5506	0.9937 111.84 11.5597	0.9945 111.93 11.5687	0.9953 112.02 11.5777	
90.0 162.00 19.418			0.9881 111.21 11.4942	0.9885 111.26 11.4989	0.9889 111.30 11.5037	0.9893 111.35 11.5084	0.9901 111.44 11.5178	0.9909 111.53 11.5271	0.9917 111.62 11.5363	0.9925 111.71 11.5455	0.9933 111.79 11.5546	0.9940 111.88 11.5636	0.9948 111.97 11.5726	
90.1 162.18 19.612			0.9876 111.16 11.4889	0.9880 111.20 11.4937	0.9884 111.25 11.4984	0.9888 111.30 11.5032	0.9897 111.39 11.5126	0.9905 111.48 11.5219	0.9913 111.57 11.5312	0.9920 111.66 11.5404	0.9928 111.74 11.5494	0.9936 111.83 11.5586	0.9944 111.92 11.5676	
90.2 162.36 19.807			0.9872 111.11 11.4837	0.9876 111.15 11.4885	0.9880 111.20 11.4932	0.9884 111.25 11.4979	0.9892 111.34 11.5074	0.9900 111.43 11.5167	0.9908 111.52 11.5260	0.9916 111.61 11.5352	0.9924 111.70 11.5444	0.9932 111.78 11.5535	0.9939 111.87 11.5625	
90.3 162.54 20.003			0.9867 111.06 11.4784	0.9871 111.10 11.4832	0.9875 111.15 11.4880	0.9879 111.20 11.4927	0.9888 111.29 11.5022	0.9896 111.38 11.5115	0.9904 111.47 11.5208	0.9912 111.56 11.5301	0.9919 111.65 11.5392	0.9927 111.73 11.5483	0.9935 111.82 11.5574	
90.4 162.72 20.201			0.9863 111.01 11.4731	0.9867 111.05 11.4779	0.9871 111.10 11.4827	0.9875 111.14 11.4875	0.9883 111.24 11.4969	0.9891 111.33 11.5063	0.9899 111.42 11.5157	0.9907 111.51 11.5249	0.9915 111.60 11.5341	0.9923 111.68 11.5432	0.9931 111.77 11.5523	
90.5 162.90 20.401			0.9858 110.96 11.4679	0.9862 111.00 11.4727	0.9866 111.05 11.4775	0.9870 111.09 11.4822	0.9879 111.19 11.4917	0.9887 111.28 11.5011	0.9895 111.37 11.5105	0.9903 111.46 11.5198	0.9911 111.55 11.5290	0.9919 111.63 11.5381	0.9926 111.72 11.5472	
90.6 163.08 20.601			0.9854 110.90 11.4626	0.9858 110.95 11.4674	0.9862 111.00 11.4722	0.9866 111.04 11.4770	0.9874 111.14 11.4865	0.9882 111.23 11.4959	0.9890 111.32 11.5053	0.9898 111.41 11.5146	0.9906 111.50 11.5238	0.9914 111.59 11.5330	0.9922 111.67 11.5421	
90.7 163.26 20.804			0.9849 110.85 11.4573	0.9853 110.90 11.4621	0.9857 110.95 11.4669	0.9861 110.99 11.4717	0.9870 111.08 11.4813	0.9878 111.17 11.4907	0.9886 111.27 11.5001	0.9894 111.36 11.5094	0.9902 111.45 11.5187	0.9910 111.54 11.5279	0.9918 111.62 11.5370	
90.8 163.44 21.008			0.9844 110.80 11.4520	0.9848 110.85 11.4568	0.9853 110.89 11.4617	0.9857 110.94 11.4665	0.9865 111.03 11.4760	0.9873 111.13 11.4855	0.9881 111.22 11.4949	0.9889 111.31 11.5043	0.9897 111.40 11.5135	0.9905 111.49 11.5227	0.9913 111.57 11.5319	
90.9 163.62 21.213			0.9840 110.75 11.4467	0.9844 110.80 11.4516	0.9848 110.84 11.4564	0.9852 110.89 11.4612	0.9861 110.98 11.4708	0.9869 111.08 11.4803	0.9877 111.17 11.4897	0.9885 111.26 11.4991	0.9893 111.35 11.5084	0.9901 111.44 11.5176	0.9909 111.52 11.5268	

TABLE 12 - CONTINUED

DENSITY OF COMPRESSED LIQUID ARGON - CONTINUED

1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA			TABLE ENTRIES 1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL											
PSIA ATM.	12.000 0.817	14.696 1.000	25.000 1.701	50.000 3.402	75.000 5.103	100.000 6.805	150.000 10.207	200.000 13.609	250.000 17.011	300.000 20.414	350.000 23.816	400.000 27.218	450.000 30.621	
91.0 163.80 21.420			0.9835 110.70 11.4414	0.9840 110.75 11.4463	0.9844 110.79 11.4511	0.9848 110.84 11.4559	0.9856 110.93 11.4655	0.9864 111.02 11.4751	0.9872 111.12 11.4845	0.9881 111.21 11.4939	0.9889 111.30 11.5032	0.9896 111.39 11.5125	0.9904 111.48 11.5216	
91.1 163.98 21.628			0.9831 110.65 11.4361	0.9835 110.69 11.4410	0.9839 110.74 11.4458	0.9843 110.79 11.4507	0.9852 110.88 11.4603	0.9860 110.97 11.4698	0.9868 111.07 11.4793	0.9876 111.16 11.4887	0.9884 111.25 11.4980	0.9892 111.34 11.5073	0.9900 111.43 11.5165	
91.2 164.16 21.838			0.9826 110.60 11.4308	0.9830 110.64 11.4357	0.9835 110.69 11.4405	0.9839 110.74 11.4454	0.9847 110.83 11.4550	0.9855 110.92 11.4646	0.9863 111.02 11.4741	0.9872 111.11 11.4835	0.9880 111.20 11.4929	0.9888 111.29 11.5022	0.9896 111.38 11.5114	
91.3 164.34 22.050			0.9822 110.54 11.4254	0.9826 110.59 11.4303	0.9830 110.64 11.4352	0.9834 110.69 11.4401	0.9843 110.78 11.4498	0.9851 110.87 11.4593	0.9859 110.96 11.4689	0.9867 111.06 11.4783	0.9875 111.15 11.4877	0.9883 111.24 11.4970	0.9891 111.33 11.5063	
91.4 164.52 22.263			0.9817 110.49 11.4201	0.9821 110.54 11.4250	0.9826 110.59 11.4299	0.9830 110.64 11.4348	0.9838 110.73 11.4445	0.9846 110.82 11.4541	0.9855 110.91 11.4636	0.9863 111.01 11.4731	0.9871 111.10 11.4825	0.9879 111.19 11.4918	0.9887 111.28 11.5011	
91.5 164.70 22.478			0.9812 110.44 11.4148	0.9817 110.49 11.4197	0.9821 110.54 11.4246	0.9825 110.58 11.4295	0.9833 110.68 11.4392	0.9842 110.77 11.4488	0.9850 110.86 11.4584	0.9858 110.96 11.4679	0.9866 111.05 11.4773	0.9874 111.14 11.4867	0.9882 111.23 11.4960	
91.6 164.88 22.694			0.9808 110.39 11.4094	0.9812 110.44 11.4144	0.9816 110.49 11.4193	0.9821 110.53 11.4242	0.9829 110.63 11.4339	0.9837 110.72 11.4436	0.9846 110.81 11.4532	0.9854 110.90 11.4627	0.9862 111.00 11.4721	0.9870 111.09 11.4815	0.9878 111.18 11.4908	
91.7 165.06 22.911			0.9803 110.34 11.4041	0.9808 110.39 11.4090	0.9812 110.43 11.4140	0.9816 110.48 11.4189	0.9824 110.58 11.4286	0.9833 110.67 11.4383	0.9841 110.76 11.4479	0.9849 110.85 11.4575	0.9857 110.95 11.4669	0.9865 111.04 11.4763	0.9873 111.13 11.4857	
91.8 165.24 23.131			0.9799 110.29 11.3987	0.9803 110.33 11.4037	0.9807 110.38 11.4086	0.9811 110.43 11.4136	0.9820 110.52 11.4234	0.9828 110.62 11.4331	0.9836 110.71 11.4427	0.9845 110.80 11.4523	0.9853 110.90 11.4617	0.9861 110.99 11.4712	0.9869 111.08 11.4805	
91.9 165.42 23.352			0.9794 110.23 11.3934	0.9798 110.28 11.3984	0.9803 110.33 11.4033	0.9807 110.38 11.4082	0.9815 110.47 11.4181	0.9824 110.57 11.4278	0.9832 110.66 11.4374	0.9840 110.75 11.4470	0.9848 110.85 11.4565	0.9857 110.94 11.4660	0.9865 111.03 11.4753	
92.0 165.60 23.574			0.9790 110.18 11.3880	0.9794 110.23 11.3930	0.9798 110.28 11.3980	0.9802 110.33 11.4029	0.9811 110.42 11.4128	0.9819 110.52 11.4225	0.9827 110.61 11.4322	0.9836 110.70 11.4418	0.9844 110.79 11.4513	0.9852 110.89 11.4608	0.9860 110.98 11.4702	
92.1 165.78 23.798			0.9785 110.13 11.3827	0.9789 110.18 11.3877	0.9793 110.23 11.3926	0.9798 110.28 11.3976	0.9806 110.37 11.4074	0.9815 110.47 11.4172	0.9823 110.56 11.4269	0.9831 110.65 11.4366	0.9839 110.74 11.4461	0.9848 110.84 11.4556	0.9856 110.93 11.4650	
92.2 165.96 24.024			0.9780 110.08 11.3773	0.9785 110.13 11.3823	0.9789 110.18 11.3873	0.9793 110.22 11.3923	0.9802 110.32 11.4021	0.9810 110.41 11.4119	0.9818 110.51 11.4217	0.9827 110.60 11.4313	0.9835 110.69 11.4409	0.9843 110.79 11.4504	0.9851 110.88 11.4598	
92.3 166.14 24.251			0.9776 110.03 11.3719	0.9780 110.08 11.3769	0.9784 110.12 11.3819	0.9789 110.17 11.3869	0.9797 110.27 11.3968	0.9806 110.36 11.4066	0.9814 110.46 11.4164	0.9822 110.55 11.4261	0.9830 110.64 11.4357	0.9839 110.74 11.4452	0.9847 110.83 11.4547	
92.4 166.32 24.480			0.9771 109.97 11.3665	0.9775 110.02 11.3716	0.9780 110.07 11.3766	0.9784 110.12 11.3816	0.9792 110.22 11.3915	0.9801 110.31 11.4013	0.9809 110.41 11.4111	0.9818 110.50 11.4208	0.9826 110.59 11.4304	0.9834 110.69 11.4400	0.9842 110.78 11.4495	
92.5 166.50 24.711			0.9766 109.92 11.3611	0.9771 109.97 11.3662	0.9775 110.02 11.3712	0.9779 110.07 11.3762	0.9788 110.16 11.3862	0.9796 110.26 11.3960	0.9805 110.35 11.4059	0.9813 110.45 11.4156	0.9821 110.54 11.4252	0.9830 110.63 11.4348	0.9838 110.73 11.4443	
92.6 166.68 24.943			0.9762 109.87 11.3557	0.9766 109.92 11.3608	0.9770 109.97 11.3658	0.9775 110.02 11.3709	0.9783 110.11 11.3808	0.9792 110.21 11.3907	0.9800 110.30 11.4006	0.9809 110.40 11.4103	0.9817 110.49 11.4200	0.9825 110.58 11.4296	0.9833 110.68 11.4391	
92.7 166.86 25.177				0.9761 109.87 11.3554	0.9766 109.92 11.3605	0.9770 109.96 11.3655	0.9779 110.06 11.3755	0.9787 110.16 11.3854	0.9796 110.25 11.3953	0.9804 110.35 11.4050	0.9812 110.44 11.4147	0.9821 110.53 11.4243	0.9829 110.63 11.4339	
92.8 167.04 25.412				0.9757 109.81 11.3500	0.9761 109.86 11.3551	0.9766 109.91 11.3601	0.9774 110.01 11.3702	0.9783 110.11 11.3801	0.9791 110.20 11.3900	0.9800 110.30 11.3998	0.9808 110.39 11.4095	0.9816 110.48 11.4191	0.9824 110.58 11.4287	
92.9 167.22 25.649				0.9752 109.76 11.3446	0.9757 109.81 11.3497	0.9761 109.86 11.3548	0.9770 109.96 11.3648	0.9778 110.05 11.3748	0.9787 110.15 11.3847	0.9795 110.24 11.3945	0.9803 110.34 11.4042	0.9812 110.43 11.4139	0.9820 110.53 11.4235	

TABLE 12 - CONTINUED

DENSITY OF COMPRESSED LIQUID ARGON - CONTINUED

1. TEMPERATURE, K 2. TEMPERATURE, °R 3. VAPOR PRESSURE, PSIA				TABLE ENTRIES											
				1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL											
PSIA	12.000	14.696	25.000	50.000	75.000	100.000	150.000	200.000	250.000	300.000	350.000	400.000	450.000		
ATM.	0.817	1.000	1.701	3.402	5.103	6.805	10.207	13.609	17.011	20.414	23.816	27.218	30.621		
93.0 167.40 25.888				0.9748 109.71 11.3392	0.9752 109.76 11.3443	0.9756 109.81 11.3494	0.9765 109.91 11.3595	0.9774 110.00 11.3694	0.9782 110.10 11.3794	0.9791 110.19 11.3892	0.9799 110.29 11.3990	0.9807 110.38 11.4086	0.9815 110.47 11.4183		
93.1 167.58 26.128				0.9743 109.66 11.3338	0.9747 109.71 11.3389	0.9752 109.76 11.3440	0.9760 109.85 11.3541	0.9769 109.95 11.3641	0.9777 110.05 11.3741	0.9786 110.14 11.3839	0.9794 110.24 11.3937	0.9803 110.33 11.4034	0.9811 110.42 11.4130		
93.2 167.76 26.371				0.9738 109.61 11.3284	0.9743 109.66 11.3335	0.9747 109.70 11.3386	0.9756 109.80 11.3487	0.9764 109.90 11.3588	0.9773 110.00 11.3687	0.9781 110.09 11.3786	0.9790 110.19 11.3884	0.9798 110.28 11.3982	0.9807 110.37 11.4078		
93.3 167.94 26.614				0.9734 109.55 11.3230	0.9738 109.60 11.3281	0.9742 109.65 11.3332	0.9751 109.75 11.3434	0.9760 109.85 11.3534	0.9768 109.94 11.3634	0.9777 110.04 11.3733	0.9785 110.14 11.3832	0.9794 110.23 11.3929	0.9802 110.32 11.4026		
93.4 168.12 26.860				0.9729 109.50 11.3176	0.9733 109.55 11.3227	0.9738 109.60 11.3278	0.9746 109.70 11.3380	0.9755 109.80 11.3481	0.9764 109.89 11.3581	0.9772 109.99 11.3680	0.9781 110.08 11.3779	0.9789 110.18 11.3876	0.9798 110.27 11.3974		
93.5 168.30 27.107				0.9724 109.45 11.3121	0.9729 109.50 11.3173	0.9733 109.55 11.3224	0.9742 109.65 11.3326	0.9751 109.74 11.3427	0.9759 109.84 11.3528	0.9768 109.94 11.3627	0.9776 110.03 11.3726	0.9785 110.13 11.3824	0.9793 110.22 11.3921		
93.6 168.48 27.356				0.9720 109.40 11.3067	0.9724 109.45 11.3119	0.9728 109.50 11.3170	0.9737 109.59 11.3272	0.9746 109.69 11.3374	0.9755 109.79 11.3474	0.9763 109.89 11.3574	0.9772 109.98 11.3673	0.9780 110.08 11.3771	0.9789 110.17 11.3869		
93.7 168.66 27.607				0.9715 109.34 11.3012	0.9719 109.39 11.3064	0.9724 109.44 11.3116	0.9733 109.54 11.3218	0.9741 109.64 11.3320	0.9750 109.74 11.3421	0.9759 109.83 11.3521	0.9767 109.93 11.3620	0.9776 110.03 11.3719	0.9784 110.12 11.3816		
93.8 168.84 27.859				0.9710 109.29 11.2958	0.9715 109.34 11.3010	0.9719 109.39 11.3062	0.9728 109.49 11.3164	0.9737 109.59 11.3266	0.9745 109.69 11.3367	0.9754 109.78 11.3468	0.9763 109.88 11.3568	0.9771 109.98 11.3666	0.9779 110.07 11.3764		
93.9 169.02 28.113				0.9706 109.24 11.2903	0.9710 109.29 11.2956	0.9714 109.34 11.3007	0.9723 109.44 11.3110	0.9732 109.54 11.3213	0.9741 109.63 11.3314	0.9749 109.73 11.3414	0.9758 109.83 11.3514	0.9767 109.92 11.3613	0.9775 110.02 11.3711		
94.0 169.20 28.369				0.9701 109.18 11.2849	0.9705 109.24 11.2901	0.9710 109.29 11.2953	0.9719 109.39 11.3056	0.9727 109.48 11.3159	0.9736 109.58 11.3260	0.9745 109.68 11.3361	0.9753 109.78 11.3461	0.9762 109.87 11.3560	0.9770 109.97 11.3659		
94.1 169.38 28.626				0.9696 109.13 11.2794	0.9701 109.18 11.2847	0.9705 109.23 11.2899	0.9714 109.33 11.3002	0.9723 109.42 11.3105	0.9732 109.53 11.3207	0.9740 109.63 11.3308	0.9749 109.73 11.3408	0.9757 109.82 11.3507	0.9766 109.92 11.3606		
94.2 169.56 28.886				0.9691 109.08 11.2740	0.9696 109.13 11.2792	0.9700 109.18 11.2844	0.9709 109.28 11.2948	0.9718 109.38 11.3051	0.9727 109.48 11.3153	0.9736 109.58 11.3254	0.9744 109.67 11.3355	0.9753 109.77 11.3454	0.9761 109.87 11.3553		
94.3 169.74 29.147				0.9687 109.03 11.2685	0.9691 109.08 11.2737	0.9696 109.13 11.2790	0.9705 109.23 11.2894	0.9714 109.33 11.2997	0.9722 109.43 11.3099	0.9731 109.53 11.3201	0.9740 109.62 11.3302	0.9748 109.72 11.3401	0.9757 109.82 11.3501		
94.4 169.92 29.409				0.9682 108.97 11.2630	0.9687 109.02 11.2683	0.9691 109.07 11.2735	0.9700 109.18 11.2840	0.9709 109.28 11.2943	0.9718 109.37 11.3046	0.9726 109.47 11.3147	0.9735 109.57 11.3248	0.9744 109.67 11.3348	0.9752 109.76 11.3448		
94.5 170.10 29.674				0.9677 108.92 11.2575	0.9682 108.97 11.2628	0.9686 109.02 11.2681	0.9695 109.12 11.2785	0.9704 109.22 11.2889	0.9713 109.32 11.2992	0.9722 109.42 11.3094	0.9731 109.52 11.3195	0.9739 109.62 11.3295	0.9748 109.71 11.3395		
94.6 170.28 29.940				0.9673 108.87 11.2520	0.9677 108.92 11.2573	0.9682 108.97 11.2626	0.9691 109.07 11.2731	0.9700 109.17 11.2835	0.9708 109.27 11.2938	0.9717 109.37 11.3040	0.9726 109.47 11.3142	0.9735 109.57 11.3242	0.9743 109.66 11.3342		
94.7 170.46 30.208				0.9668 108.81 11.2465	0.9672 108.86 11.2518	0.9677 108.92 11.2571	0.9685 109.02 11.2676	0.9695 109.12 11.2781	0.9704 109.22 11.2884	0.9713 109.32 11.2987	0.9721 109.42 11.3088	0.9730 109.51 11.3189	0.9739 109.61 11.3289		
94.8 170.64 30.478				0.9663 108.76 11.2410	0.9668 108.81 11.2464	0.9672 108.86 11.2517	0.9681 108.97 11.2622	0.9690 109.07 11.2726	0.9699 109.17 11.2830	0.9708 109.27 11.2933	0.9717 109.36 11.3035	0.9726 109.46 11.3136	0.9734 109.56 11.3236		
94.9 170.82 30.750				0.9658 108.71 11.2355	0.9663 108.76 11.2409	0.9668 108.81 11.2462	0.9677 108.91 11.2567	0.9686 109.01 11.2672	0.9695 109.11 11.2776	0.9703 109.21 11.2879	0.9712 109.31 11.2981	0.9721 109.41 11.3083	0.9730 109.51 11.3183		

TABLE 12 - CONTINUED

DENSITY OF COMPRESSED LIQUID ARGON - CONTINUED

1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA				TABLE ENTRIES										
				1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL										
PSIA ATM.	12.000 0.817	14.696 1.000	25.000 1.701	50.000 3.402	75.000 5.103	100.000 6.805	150.000 10.207	200.000 13.609	250.000 17.011	300.000 20.414	350.000 23.816	400.000 27.218	450.000 30.621	
95.0 171.00 31.024				0.9654 108.65 11.2300	0.9658 108.71 11.2354	0.9663 108.76 11.2407	0.9672 108.86 11.2513	0.9681 108.96 11.2618	0.9690 109.06 11.2722	0.9699 109.16 11.2825	0.9708 109.26 11.2928	0.9716 109.36 11.3029	0.9725 109.46 11.3130	
95.1 171.18 31.299				0.9649 108.60 11.2245	0.9654 108.65 11.2299	0.9658 108.70 11.2352	0.9667 108.81 11.2458	0.9676 108.91 11.2563	0.9685 109.01 11.2668	0.9694 109.11 11.2771	0.9703 109.21 11.2874	0.9712 109.31 11.2976	0.9720 109.41 11.3077	
95.2 171.36 31.576				0.9644 108.55 11.2190	0.9649 108.60 11.2243	0.9653 108.65 11.2297	0.9663 108.75 11.2403	0.9672 108.86 11.2509	0.9681 108.96 11.2614	0.9690 109.06 11.2717	0.9698 109.16 11.2820	0.9707 109.26 11.2923	0.9716 109.35 11.3024	
95.3 171.54 31.855				0.9639 108.49 11.2134	0.9644 108.55 11.2188	0.9649 108.60 11.2242	0.9658 108.70 11.2349	0.9667 108.80 11.2455	0.9676 108.90 11.2559	0.9685 109.01 11.2664	0.9694 109.11 11.2767	0.9703 109.20 11.2869	0.9711 109.30 11.2971	
95.4 171.72 32.136				0.9635 108.44 11.2079	0.9639 108.49 11.2133	0.9644 108.54 11.2187	0.9653 108.65 11.2294	0.9662 108.75 11.2400	0.9671 108.85 11.2505	0.9680 108.95 11.2610	0.9689 109.05 11.2713	0.9698 109.15 11.2816	0.9707 109.25 11.2917	
95.5 171.90 32.419				0.9630 108.39 11.2024	0.9635 108.44 11.2078	0.9639 108.49 11.2132	0.9648 108.59 11.2239	0.9658 108.70 11.2345	0.9667 108.80 11.2451	0.9676 108.90 11.2555	0.9685 109.00 11.2659	0.9693 109.10 11.2762	0.9702 109.20 11.2864	
95.6 172.08 32.703				0.9625 108.33 11.1968	0.9630 108.39 11.2022	0.9634 108.44 11.2077	0.9644 108.54 11.2184	0.9653 108.64 11.2291	0.9662 108.75 11.2397	0.9671 108.85 11.2501	0.9680 108.95 11.2605	0.9689 109.05 11.2708	0.9698 109.15 11.2811	
95.7 172.26 32.990				0.9620 108.28 11.1913	0.9625 108.33 11.1967	0.9630 108.38 11.2021	0.9639 108.49 11.2129	0.9648 108.59 11.2236	0.9657 108.69 11.2342	0.9666 108.80 11.2447	0.9675 108.90 11.2551	0.9684 109.00 11.2655	0.9693 109.10 11.2757	
95.8 172.44 33.278				0.9616 108.22 11.1857	0.9620 108.28 11.1912	0.9625 108.33 11.1966	0.9634 108.44 11.2074	0.9643 108.54 11.2181	0.9653 108.64 11.2288	0.9662 108.74 11.2393	0.9671 108.84 11.2498	0.9680 108.94 11.2601	0.9688 109.04 11.2704	
95.9 172.62 33.568				0.9611 108.17 11.1801	0.9616 108.22 11.1856	0.9620 108.28 11.1911	0.9630 108.38 11.2019	0.9639 108.49 11.2127	0.9648 108.59 11.2233	0.9657 108.69 11.2339	0.9666 108.79 11.2444	0.9675 108.89 11.2547	0.9684 108.99 11.2650	
96.0 172.80 33.860				0.9606 108.12 11.1746	0.9611 108.17 11.1801	0.9615 108.22 11.1855	0.9625 108.33 11.1964	0.9634 108.43 11.2072	0.9643 108.54 11.2179	0.9652 108.64 11.2285	0.9661 108.74 11.2390	0.9670 108.84 11.2494	0.9679 108.94 11.2597	
96.1 172.98 34.154				0.9601 108.06 11.1690	0.9606 108.12 11.1745	0.9611 108.17 11.1800	0.9620 108.28 11.1909	0.9629 108.38 11.2017	0.9639 108.48 11.2124	0.9648 108.59 11.2230	0.9657 108.69 11.2335	0.9666 108.79 11.2440	0.9675 108.89 11.2543	
96.2 173.16 34.450				0.9596 108.01 11.1634	0.9601 108.06 11.1689	0.9606 108.12 11.1744	0.9615 108.22 11.1854	0.9625 108.33 11.1962	0.9634 108.43 11.2069	0.9643 108.53 11.2176	0.9652 108.64 11.2281	0.9661 108.74 11.2386	0.9670 108.84 11.2490	
96.3 173.34 34.748				0.9592 107.96 11.1578	0.9596 108.01 11.1634	0.9601 108.06 11.1689	0.9611 108.17 11.1798	0.9620 108.27 11.1907	0.9629 108.38 11.2015	0.9638 108.48 11.2121	0.9647 108.58 11.2227	0.9656 108.68 11.2332	0.9665 108.79 11.2436	
96.4 173.52 35.047				0.9587 107.90 11.1522	0.9592 107.95 11.1578	0.9596 108.01 11.1633	0.9606 108.11 11.1743	0.9615 108.22 11.1852	0.9624 108.32 11.1960	0.9634 108.43 11.2067	0.9643 108.53 11.2173	0.9652 108.63 11.2278	0.9661 108.73 11.2382	
96.5 173.70 35.349				0.9582 107.85 11.1466	0.9587 107.90 11.1522	0.9592 107.95 11.1578	0.9601 108.06 11.1688	0.9610 108.17 11.1797	0.9620 108.27 11.1905	0.9629 108.38 11.2012	0.9638 108.48 11.2119	0.9647 108.58 11.2224	0.9656 108.68 11.2329	
96.6 173.88 35.652				0.9577 107.79 11.1410	0.9582 107.85 11.1466	0.9587 107.90 11.1522	0.9596 108.01 11.1632	0.9606 108.11 11.1742	0.9615 108.22 11.1850	0.9624 108.32 11.1958	0.9633 108.43 11.2064	0.9642 108.53 11.2170	0.9651 108.63 11.2275	
96.7 174.06 35.958				0.9572 107.74 11.1354	0.9577 107.79 11.1410	0.9582 107.85 11.1466	0.9591 107.95 11.1577	0.9601 108.06 11.1686	0.9610 108.17 11.1795	0.9620 108.27 11.1903	0.9629 108.37 11.2010	0.9638 108.48 11.2116	0.9647 108.58 11.2221	
96.8 174.24 36.265				0.9568 107.68 11.1298	0.9572 107.74 11.1354	0.9577 107.79 11.1410	0.9587 107.90 11.1521	0.9596 108.01 11.1631	0.9606 108.11 11.1740	0.9615 108.22 11.1848	0.9624 108.32 11.1955	0.9633 108.42 11.2062	0.9642 108.52 11.2167	
96.9 174.42 36.574				0.9563 107.63 11.1242	0.9568 107.68 11.1298	0.9572 107.74 11.1354	0.9582 107.85 11.1466	0.9591 107.95 11.1576	0.9601 108.06 11.1685	0.9610 108.16 11.1794	0.9619 108.27 11.1901	0.9629 108.37 11.2008	0.9638 108.47 11.2113	

TABLE 12 - CONTINUED

DENSITY OF COMPRESSED LIQUID ARGON - CONTINUED

		TABLE ENTPIES											
1. TEMPERATURE, K 2. TEMPERATURE, °F 3. VAPOR PRESSURE, PSIA		1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL											
PSIA	12.000	14.696	25.000	50.000	75.000	100.000	150.000	200.000	250.000	300.000	350.000	400.000	450.000
174.60	1.617	1.600	1.781	3.402	5.103	6.899	10.207	13.609	17.011	20.414	23.816	27.218	30.621
97.0				0.9558	0.9553	0.9568	0.9577	0.9587	0.9596	0.9605	0.9615	0.9624	0.9633
174.60				107.58	107.63	107.68	107.79	107.90	108.01	108.11	108.21	108.32	108.42
36.886				11.1185	11.1242	11.1298	11.1410	11.1521	11.1630	11.1739	11.1846	11.1953	11.2059
97.1				0.9553	0.9558	0.9563	0.9572	0.9582	0.9591	0.9601	0.9610	0.9619	0.9628
174.78				107.52	107.58	107.63	107.74	107.85	107.95	108.05	108.15	108.27	108.37
37.199				11.1129	11.1186	11.1242	11.1354	11.1465	11.1575	11.1684	11.1792	11.1899	11.2005
97.2				0.9548	0.9553	0.9558	0.9568	0.9577	0.9587	0.9596	0.9605	0.9615	0.9624
174.96				107.47	107.52	107.58	107.68	107.79	107.90	108.00	108.11	108.21	108.32
37.514				11.1073	11.1130	11.1186	11.1298	11.1410	11.1520	11.1629	11.1737	11.1845	11.1951
97.3				0.9543	0.9548	0.9553	0.9563	0.9572	0.9582	0.9591	0.9601	0.9610	0.9619
175.14				107.41	107.47	107.52	107.63	107.74	107.85	107.95	108.05	108.16	108.26
37.831				11.1017	11.1073	11.1130	11.1243	11.1354	11.1465	11.1574	11.1683	11.1790	11.1897
97.4				0.9538	0.9543	0.9548	0.9558	0.9568	0.9577	0.9587	0.9596	0.9605	0.9614
175.32				107.35	107.41	107.47	107.58	107.68	107.79	107.90	108.00	108.11	108.21
38.150				11.0960	11.1017	11.1074	11.1187	11.1299	11.1409	11.1519	11.1628	11.1735	11.1843
97.5				0.9533	0.9538	0.9543	0.9553	0.9563	0.9572	0.9582	0.9591	0.9600	0.9610
175.50				107.30	107.36	107.41	107.52	107.63	107.74	107.84	107.95	108.05	108.15
38.471				11.0904	11.0961	11.1018	11.1131	11.1243	11.1354	11.1464	11.1573	11.1681	11.1788
97.6				0.9529	0.9534	0.9539	0.9548	0.9558	0.9568	0.9577	0.9586	0.9596	0.9605
175.68				107.25	107.30	107.36	107.47	107.58	107.68	107.79	107.90	108.00	108.11
38.795				11.0847	11.0904	11.0961	11.1075	11.1187	11.1299	11.1409	11.1518	11.1627	11.1734
97.7				0.9524	0.9529	0.9534	0.9544	0.9553	0.9563	0.9572	0.9582	0.9591	0.9600
175.86				107.19	107.25	107.30	107.41	107.52	107.63	107.74	107.84	107.95	108.05
39.120				11.0790	11.0848	11.0905	11.1019	11.1132	11.1243	11.1354	11.1463	11.1572	11.1680
97.8				0.9519	0.9524	0.9529	0.9539	0.9548	0.9558	0.9568	0.9577	0.9586	0.9596
176.04				107.14	107.19	107.25	107.36	107.47	107.58	107.68	107.79	107.90	108.00
39.447				11.0734	11.0791	11.0848	11.0963	11.1075	11.1188	11.1299	11.1409	11.1518	11.1626
97.9				0.9514	0.9519	0.9524	0.9534	0.9544	0.9553	0.9563	0.9572	0.9582	0.9591
176.22				107.08	107.14	107.19	107.31	107.42	107.52	107.63	107.74	107.84	107.95
39.776				11.0677	11.0735	11.0792	11.0907	11.1020	11.1132	11.1243	11.1354	11.1463	11.1571
98.0				0.9509	0.9514	0.9519	0.9529	0.9539	0.9548	0.9558	0.9568	0.9577	0.9586
176.40				107.03	107.08	107.14	107.25	107.36	107.47	107.58	107.68	107.79	107.90
40.107				11.0620	11.0678	11.0735	11.0850	11.0964	11.1077	11.1188	11.1299	11.1408	11.1517
98.1				0.9504	0.9509	0.9514	0.9524	0.9534	0.9544	0.9553	0.9563	0.9572	0.9582
176.58				106.97	107.03	107.09	107.20	107.31	107.42	107.52	107.63	107.74	107.84
40.441				11.0563	11.0621	11.0678	11.0794	11.0908	11.1021	11.1133	11.1244	11.1353	11.1462
98.2				0.9499	0.9504	0.9509	0.9519	0.9529	0.9539	0.9549	0.9558	0.9568	0.9577
176.76				106.92	106.97	107.03	107.14	107.25	107.35	107.47	107.58	107.68	107.79
40.776				11.0506	11.0564	11.0621	11.0738	11.0852	11.0965	11.1077	11.1188	11.1299	11.1408
98.3				0.9494	0.9499	0.9504	0.9514	0.9524	0.9534	0.9544	0.9553	0.9563	0.9572
176.94				106.86	106.92	106.98	107.09	107.20	107.31	107.42	107.52	107.63	107.74
41.113				11.0449	11.0508	11.0565	11.0682	11.0796	11.0909	11.1022	11.1133	11.1244	11.1353
98.4				0.9489	0.9494	0.9499	0.9510	0.9520	0.9529	0.9539	0.9549	0.9558	0.9568
177.12				106.81	106.86	106.92	107.03	107.14	107.25	107.36	107.47	107.58	107.68
41.453				11.0392	11.0451	11.0508	11.0625	11.0740	11.0854	11.0966	11.1078	11.1189	11.1298
98.5				0.9485	0.9490	0.9495	0.9505	0.9515	0.9525	0.9534	0.9544	0.9553	0.9563
177.30				106.75	106.81	106.87	106.98	107.09	107.20	107.31	107.42	107.53	107.63
41.794				11.0335	11.0394	11.0452	11.0569	11.0684	11.0798	11.0911	11.1023	11.1134	11.1244
98.6				0.9480	0.9485	0.9490	0.9500	0.9510	0.9520	0.9529	0.9539	0.9549	0.9558
177.48				106.71	106.75	106.81	106.92	107.04	107.15	107.26	107.36	107.47	107.58
42.138				11.0278	11.0337	11.0395	11.0512	11.0626	11.0742	11.0855	11.0967	11.1079	11.1189
98.7				0.9475	0.9480	0.9485	0.9495	0.9505	0.9515	0.9525	0.9534	0.9544	0.9553
177.66				106.64	106.70	106.76	106.87	106.98	107.09	107.20	107.31	107.42	107.53
42.484				11.0220	11.0280	11.0338	11.0455	11.0571	11.0686	11.0800	11.0912	11.1024	11.1134
98.8				0.9470	0.9475	0.9480	0.9490	0.9500	0.9510	0.9520	0.9530	0.9539	0.9549
177.84				106.59	106.64	106.70	106.81	106.93	107.04	107.15	107.26	107.37	107.47
42.831				11.0163	11.0222	11.0282	11.0399	11.0515	11.0630	11.0744	11.0857	11.0969	11.1079
98.9				0.9465	0.9470	0.9475	0.9485	0.9495	0.9505	0.9515	0.9525	0.9534	0.9544
178.02				106.53	106.59	106.65	106.76	106.87	106.98	107.09	107.20	107.31	107.42
43.181				11.0106	11.0165	11.0224	11.0342	11.0458	11.0574	11.0688	11.0801	11.0913	11.1024

TABLE 12 - CONTINUEO

DENSITY OF COMPRESSED LIQUID ARGON - CONTINUEO

TABLE ENTRIES														
1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA				1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL										
PSIA ATM.	12.000 0.817	14.696 1.000	25.000 1.701	50.000 3.402	75.000 5.103	100.000 6.805	150.000 10.207	200.000 13.609	250.000 17.011	300.000 20.414	350.000 23.816	400.000 27.218	450.000 30.621	
99.0 178.20 43.533				0.9460 106.48 11.0048	0.9465 106.53 11.0108	0.9470 106.59 11.0167	0.9480 106.70 11.0285	0.9490 106.82 11.0402	0.9500 106.93 11.0518	0.9510 107.04 11.0632	0.9520 107.15 11.0746	0.9530 107.26 11.0860	0.9539 107.37 11.0970	
99.1 178.38 43.887				0.9455 106.42 10.9991	0.9460 106.48 11.0051	0.9465 106.53 11.0110	0.9476 106.65 11.0228	0.9486 106.76 11.0346	0.9496 106.87 11.0461	0.9505 106.99 11.0576	0.9515 107.10 11.0690	0.9525 107.21 11.0803	0.9535 107.31 11.0915	
99.2 178.56 44.243				0.9450 106.36 10.9933	0.9455 106.42 10.9993	0.9461 106.48 11.0053	0.9471 106.59 11.0172	0.9481 106.71 11.0289	0.9491 106.82 11.0405	0.9501 106.93 11.0520	0.9510 107.04 11.0635	0.9520 107.15 11.0748	0.9530 107.26 11.0860	
99.3 178.74 44.602				0.9445 106.31 10.9876	0.9450 106.37 10.9936	0.9456 106.42 10.9996	0.9466 106.54 11.0115	0.9476 106.65 11.0232	0.9486 106.77 11.0349	0.9496 106.88 11.0464	0.9506 106.99 11.0579	0.9515 107.10 11.0692	0.9525 107.21 11.0804	
99.4 178.92 44.962				0.9440 106.25 10.9818	0.9445 106.31 10.9878	0.9451 106.37 10.9938	0.9461 106.48 11.0058	0.9471 106.60 11.0176	0.9481 106.71 11.0293	0.9491 106.82 11.0408	0.9501 106.93 11.0523	0.9511 107.04 11.0637	0.9520 107.15 11.0749	
99.5 179.10 45.325				0.9435 106.20 10.9760	0.9441 106.25 10.9821	0.9446 106.31 10.9881	0.9456 106.43 11.0001	0.9466 106.54 11.0119	0.9476 106.66 11.0236	0.9486 106.77 11.0352	0.9496 106.88 11.0467	0.9506 106.99 11.0581	0.9516 107.10 11.0694	
99.6 179.28 45.690				0.9430 106.14 10.9703	0.9436 106.20 10.9763	0.9441 106.26 10.9824	0.9451 106.37 10.9944	0.9461 106.49 11.0062	0.9471 106.60 11.0180	0.9481 106.71 11.0296	0.9491 106.83 11.0411	0.9501 106.94 11.0526	0.9511 107.05 11.0639	
99.7 179.46 46.056				0.9425 106.08 10.9645	0.9431 106.14 10.9706	0.9436 106.20 10.9766	0.9446 106.32 10.9886	0.9456 106.43 11.0005	0.9467 106.55 11.0123	0.9477 106.66 11.0240	0.9487 106.77 11.0356	0.9496 106.88 11.0470	0.9506 106.99 11.0584	
99.8 179.64 46.426				0.9420 106.03 10.9587	0.9426 106.09 10.9648	0.9431 106.15 10.9709	0.9441 106.26 10.9829	0.9452 106.38 10.9949	0.9462 106.49 11.0067	0.9472 106.61 11.0184	0.9482 106.72 11.0300	0.9492 106.83 11.0414	0.9501 106.94 11.0528	
99.9 179.82 46.797				0.9415 105.97 10.9529	0.9421 106.03 10.9590	0.9426 106.09 10.9651	0.9436 106.21 10.9772	0.9447 106.32 10.9892	0.9457 106.44 11.0010	0.9467 106.55 11.0127	0.9477 106.66 11.0244	0.9487 106.78 11.0359	0.9497 106.89 11.0473	
100.0 180.00 47.170				0.9410 105.92 10.9471	0.9416 105.98 10.9532	0.9421 106.03 10.9593	0.9431 106.15 10.9715	0.9442 106.27 10.9835	0.9452 106.38 10.9953	0.9462 106.50 11.0071	0.9472 106.61 11.0188	0.9482 106.72 11.0303	0.9492 106.83 11.0417	
100.1 180.18 47.546				0.9405 105.86 10.9413	0.9411 105.92 10.9474	0.9416 105.98 10.9536	0.9426 106.10 10.9657	0.9437 106.21 10.9778	0.9447 106.33 10.9897	0.9457 106.44 11.0015	0.9467 106.56 11.0132	0.9477 106.67 11.0247	0.9487 106.78 11.0362	
100.2 180.36 47.924				0.9400 105.80 10.9355	0.9406 105.86 10.9416	0.9411 105.92 10.9478	0.9422 106.04 10.9600	0.9432 106.16 10.9720	0.9442 106.27 10.9840	0.9452 106.39 10.9958	0.9462 106.50 11.0075	0.9472 106.61 11.0192	0.9482 106.72 11.0306	
100.3 180.54 48.304				0.9395 105.75 10.9296	0.9401 105.81 10.9358	0.9406 105.87 10.9420	0.9417 105.99 10.9542	0.9427 106.10 10.9663	0.9437 106.22 10.9783	0.9447 106.33 10.9902	0.9458 106.45 11.0019	0.9468 106.56 11.0136	0.9478 106.67 11.0251	
100.4 180.72 48.686				0.9390 105.69 10.9238	0.9396 105.75 10.9300	0.9401 105.81 10.9362	0.9412 105.93 10.9485	0.9422 106.05 10.9606	0.9432 106.16 10.9726	0.9443 106.28 10.9845	0.9453 106.39 10.9963	0.9463 106.51 11.0080	0.9473 106.62 11.0195	
100.5 180.90 49.071				0.9385 105.63 10.9180	0.9391 105.69 10.9242	0.9396 105.75 10.9304	0.9407 105.87 10.9427	0.9417 105.99 10.9549	0.9428 106.11 10.9669	0.9438 106.22 10.9789	0.9448 106.34 10.9907	0.9458 106.45 11.0024	0.9468 106.56 11.0140	
100.6 181.08 49.457				0.9380 105.58 10.9121	0.9386 105.64 10.9184	0.9391 105.70 10.9246	0.9402 105.82 10.9369	0.9412 105.94 10.9491	0.9423 106.05 10.9612	0.9433 106.17 10.9732	0.9443 106.28 10.9850	0.9453 106.40 10.9968	0.9463 106.51 11.0084	
100.7 181.26 49.846				0.9375 105.52 10.9063	0.9381 105.58 10.9126	0.9386 105.64 10.9188	0.9397 105.76 10.9312	0.9407 105.88 10.9434	0.9418 106.00 10.9555	0.9428 106.11 10.9675	0.9438 106.23 10.9794	0.9448 106.34 10.9912	0.9458 106.46 11.0028	
100.8 181.44 50.237					0.9376 105.53 10.9067	0.9381 105.59 10.9130	0.9392 105.71 10.9254	0.9402 105.83 10.9377	0.9413 105.94 10.9498	0.9423 106.06 10.9618	0.9433 106.17 10.9738	0.9444 106.29 10.9856	0.9454 106.40 10.9972	
100.9 181.62 50.631						0.9371 105.47 10.9009	0.9376 105.53 10.9072	0.9387 105.65 10.9196	0.9397 105.77 10.9319	0.9408 105.89 10.9441	0.9418 106.00 10.9562	0.9429 106.12 10.9681	0.9439 106.23 10.9799	0.9449 106.35 10.9916

TABLE 12 - CONTINUED

DENSITY OF COMPRESSED LIQUID ARGON - CONTINUED

		TABLE ENTRIES												
1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA		1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL												
PSIA	12.000	14.696	25.000	50.000	75.000	100.000	150.000	200.000	250.000	300.000	350.000	400.000	450.000	
ATM.	0.817	1.000	1.701	3.402	5.103	6.805	10.207	13.609	17.011	20.414	23.816	27.218	30.621	
101.0 181.80 51.026					0.9366 105.41 10.8950	0.9371 105.47 10.9013	0.9382 105.59 10.9138	0.9392 105.71 10.9262	0.9403 105.83 10.9384	0.9413 105.95 10.9505	0.9424 106.06 10.9624	0.9434 106.18 10.9743	0.9444 106.29 10.9861	
101.1 181.98 51.424					0.9361 105.36 10.8892	0.9366 105.42 10.8955	0.9377 105.54 10.9080	0.9388 105.66 10.9204	0.9398 105.78 10.9326	0.9408 105.89 10.9448	0.9419 106.01 10.9568	0.9429 106.13 10.9687	0.9439 106.24 10.9805	
101.2 182.16 51.825					0.9356 105.30 10.8833	0.9361 105.36 10.8896	0.9372 105.48 10.9022	0.9383 105.60 10.9146	0.9393 105.72 10.9269	0.9404 105.84 10.9391	0.9414 105.96 10.9511	0.9424 106.07 10.9630	0.9434 106.19 10.9749	
101.3 182.34 52.227					0.9351 105.24 10.8775	0.9356 105.30 10.8838	0.9367 105.43 10.8964	0.9378 105.55 10.9088	0.9388 105.67 10.9212	0.9399 105.78 10.9334	0.9409 105.90 10.9455	0.9419 106.02 10.9574	0.9430 106.13 10.9693	
101.4 182.52 52.632					0.9346 105.19 10.8716	0.9351 105.25 10.8779	0.9362 105.37 10.8906	0.9373 105.49 10.9031	0.9383 105.61 10.9154	0.9394 105.73 10.9277	0.9404 105.85 10.9398	0.9414 105.96 10.9518	0.9425 106.08 10.9636	
101.5 182.70 53.039					0.9340 105.13 10.8657	0.9346 105.19 10.8721	0.9357 105.31 10.8848	0.9368 105.43 10.8973	0.9378 105.55 10.9097	0.9389 105.67 10.9219	0.9399 105.79 10.9341	0.9410 105.91 10.9461	0.9420 106.02 10.9580	
101.6 182.88 53.449					0.9335 105.07 10.8598	0.9341 105.13 10.8662	0.9352 105.26 10.8789	0.9363 105.38 10.8915	0.9373 105.50 10.9039	0.9384 105.62 10.9162	0.9394 105.74 10.9284	0.9405 105.85 10.9405	0.9415 105.97 10.9524	
101.7 183.06 53.860					0.9330 105.02 10.8539	0.9336 105.08 10.8604	0.9347 105.20 10.8731	0.9358 105.32 10.8857	0.9368 105.44 10.8982	0.9379 105.56 10.9105	0.9389 105.68 10.9227	0.9400 105.80 10.9348	0.9410 105.91 10.9468	
101.8 183.24 54.274					0.9325 104.96 10.8480	0.9331 105.02 10.8545	0.9342 105.14 10.8672	0.9353 105.27 10.8799	0.9363 105.39 10.8924	0.9374 105.51 10.9048	0.9385 105.63 10.9170	0.9395 105.74 10.9291	0.9405 105.86 10.9411	
101.9 183.42 54.691					0.9320 104.90 10.8421	0.9326 104.96 10.8486	0.9337 105.09 10.8614	0.9348 105.21 10.8741	0.9358 105.33 10.8866	0.9369 105.45 10.8990	0.9380 105.57 10.9113	0.9390 105.69 10.9235	0.9400 105.80 10.9355	
102.0 183.60 55.109					0.9315 104.84 10.8362	0.9321 104.91 10.8427	0.9332 105.03 10.8556	0.9343 105.15 10.8683	0.9354 105.28 10.8808	0.9364 105.40 10.8933	0.9375 105.51 10.9056	0.9385 105.63 10.9178	0.9396 105.75 10.9299	
102.1 183.78 55.530					0.9310 104.79 10.8303	0.9316 104.85 10.8368	0.9327 104.97 10.8497	0.9338 105.10 10.8624	0.9349 105.22 10.8751	0.9359 105.34 10.8875	0.9370 105.46 10.8999	0.9380 105.58 10.9121	0.9391 105.70 10.9242	
102.2 183.96 55.954					0.9305 104.73 10.8244	0.9311 104.79 10.8309	0.9322 104.92 10.8438	0.9333 105.04 10.8566	0.9344 105.16 10.8693	0.9354 105.28 10.8818	0.9365 105.40 10.8942	0.9375 105.52 10.9064	0.9386 105.64 10.9186	
102.3 184.14 56.380					0.9300 104.67 10.8185	0.9305 104.73 10.8250	0.9317 104.86 10.8380	0.9328 104.98 10.8508	0.9339 105.11 10.8635	0.9349 105.23 10.8760	0.9360 105.35 10.8884	0.9371 105.47 10.9007	0.9381 105.59 10.9129	
102.4 184.32 56.808					0.9295 104.61 10.8125	0.9300 104.68 10.8191	0.9312 104.80 10.8321	0.9323 104.93 10.8449	0.9334 105.05 10.8577	0.9344 105.17 10.8703	0.9355 105.29 10.8827	0.9366 105.41 10.8950	0.9376 105.53 10.9072	
102.5 184.50 57.238					0.9290 104.56 10.8066	0.9295 104.62 10.8132	0.9307 104.75 10.8262	0.9318 104.87 10.8391	0.9329 104.99 10.8519	0.9339 105.12 10.8645	0.9350 105.24 10.8770	0.9361 105.36 10.8893	0.9371 105.48 10.9016	
102.6 184.68 57.671					0.9285 104.50 10.8006	0.9290 104.56 10.8072	0.9301 104.69 10.8203	0.9313 104.81 10.8332	0.9324 104.94 10.8460	0.9334 105.06 10.8587	0.9345 105.18 10.8712	0.9356 105.30 10.8836	0.9366 105.42 10.8959	
102.7 184.86 58.106					0.9279 104.44 10.7947	0.9285 104.51 10.8013	0.9296 104.63 10.8144	0.9308 104.76 10.8274	0.9319 104.88 10.8402	0.9330 105.01 10.8529	0.9340 105.13 10.8655	0.9351 105.25 10.8779	0.9362 105.37 10.8902	
102.8 185.04 58.544					0.9274 104.38 10.7887	0.9280 104.45 10.7953	0.9291 104.58 10.8085	0.9303 104.70 10.8215	0.9314 104.83 10.8344	0.9325 104.95 10.8471	0.9335 105.07 10.8597	0.9346 105.19 10.8722	0.9357 105.31 10.8845	
102.9 185.22 58.984					0.9269 104.33 10.7827	0.9275 104.39 10.7894	0.9286 104.52 10.8026	0.9297 104.64 10.8156	0.9309 104.77 10.8286	0.9320 104.89 10.8413	0.9330 105.02 10.8540	0.9341 105.14 10.8665	0.9352 105.26 10.8788	

TABLE 12 - CONTINUED

DENSITY OF COMPRESSED LIQUID ARGON - CONTINUED

1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA		TABLE ENTRIES											
		1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL											
PSIA	12.000	14.696	25.000	50.000	75.000	100.000	150.000	200.000	250.000	300.000	350.000	400.000	450.000
ATM.	0.817	1.000	1.701	3.402	5.103	6.805	10.207	13.609	17.011	20.414	23.816	27.218	30.621
103.0 185.40 59.427					0.9264 104.27 10.7768	0.9270 104.33 10.7834	0.9281 104.46 10.7967	0.9292 104.59 10.8098	0.9304 104.71 10.8227	0.9315 104.84 10.8355	0.9325 104.96 10.8482	0.9336 105.08 10.8607	0.9347 105.20 10.8732
103.1 185.58 59.872					0.9259 104.21 10.7708	0.9265 104.28 10.7775	0.9276 104.40 10.7908	0.9287 104.53 10.8039	0.9299 104.66 10.8169	0.9310 104.78 10.8297	0.9320 104.90 10.8424	0.9331 105.03 10.8550	0.9342 105.15 10.8675
103.2 185.76 60.319					0.9254 104.15 10.7648	0.9260 104.22 10.7715	0.9271 104.35 10.7848	0.9282 104.47 10.7980	0.9293 104.60 10.8110	0.9305 104.72 10.8239	0.9316 104.85 10.8367	0.9326 104.97 10.8493	0.9337 105.09 10.8617
103.3 185.94 60.769					0.9249 104.09 10.7588	0.9254 104.16 10.7655	0.9266 104.29 10.7789	0.9277 104.42 10.7921	0.9288 104.54 10.8052	0.9300 104.67 10.8181	0.9311 104.79 10.8309	0.9321 104.91 10.8435	0.9332 105.04 10.8560
103.4 186.12 61.221					0.9243 104.04 10.7528	0.9249 104.10 10.7595	0.9261 104.23 10.7730	0.9272 104.36 10.7862	0.9283 104.49 10.7993	0.9295 104.61 10.8123	0.9306 104.74 10.8251	0.9316 104.86 10.8378	0.9327 104.98 10.8503
103.5 186.30 61.676					0.9238 103.98 10.7468	0.9244 104.04 10.7536	0.9256 104.17 10.7670	0.9267 104.30 10.7803	0.9278 104.43 10.7934	0.9290 104.56 10.8064	0.9301 104.68 10.8193	0.9312 104.80 10.8320	0.9322 104.92 10.8446
103.6 186.48 62.133					0.9233 103.92 10.7408	0.9239 103.99 10.7476	0.9251 104.12 10.7610	0.9262 104.25 10.7744	0.9273 104.37 10.7876	0.9285 104.50 10.8006	0.9296 104.62 10.8135	0.9307 104.75 10.8262	0.9317 104.87 10.8389
103.7 186.66 62.592					0.9228 103.86 10.7347	0.9234 103.93 10.7416	0.9245 104.06 10.7551	0.9257 104.19 10.7685	0.9268 104.32 10.7817	0.9280 104.44 10.7948	0.9291 104.57 10.8077	0.9302 104.69 10.8205	0.9313 104.81 10.8331
103.8 186.84 63.054					0.9223 103.80 10.7287	0.9229 103.87 10.7356	0.9240 104.00 10.7491	0.9252 104.13 10.7625	0.9263 104.26 10.7758	0.9274 104.39 10.7889	0.9286 104.51 10.8019	0.9297 104.64 10.8147	0.9308 104.76 10.8274
103.9 187.02 63.519					0.9218 103.74 10.7227	0.9223 103.81 10.7295	0.9235 103.94 10.7431	0.9247 104.07 10.7566	0.9258 104.20 10.7699	0.9269 104.33 10.7831	0.9281 104.46 10.7961	0.9292 104.58 10.8089	0.9303 104.70 10.8217
104.0 187.20 63.986					0.9212 103.69 10.7166	0.9218 103.75 10.7235	0.9230 103.89 10.7372	0.9242 104.02 10.7507	0.9253 104.14 10.7640	0.9264 104.27 10.7772	0.9276 104.40 10.7902	0.9287 104.52 10.8031	0.9298 104.65 10.8159
104.1 187.38 64.455					0.9207 103.63 10.7106	0.9213 103.69 10.7175	0.9225 103.83 10.7312	0.9236 103.96 10.7447	0.9248 104.09 10.7581	0.9259 104.22 10.7713	0.9271 104.34 10.7844	0.9282 104.47 10.7974	0.9293 104.59 10.8102
104.2 187.56 64.928					0.9202 103.57 10.7045	0.9208 103.64 10.7114	0.9220 103.77 10.7252	0.9231 103.90 10.7388	0.9243 104.03 10.7522	0.9254 104.16 10.7655	0.9266 104.29 10.7786	0.9277 104.41 10.7916	0.9288 104.54 10.8044
104.3 187.74 65.402					0.9197 103.51 10.6984	0.9203 103.58 10.7054	0.9215 103.71 10.7192	0.9226 103.84 10.7328	0.9238 103.97 10.7463	0.9249 104.10 10.7596	0.9261 104.23 10.7727	0.9272 104.36 10.7858	0.9283 104.48 10.7986
104.4 187.92 65.879					0.9191 103.45 10.6924	0.9197 103.52 10.6993	0.9209 103.65 10.7132	0.9221 103.79 10.7268	0.9233 103.92 10.7403	0.9244 104.05 10.7537	0.9256 104.17 10.7669	0.9267 104.30 10.7799	0.9278 104.42 10.7929
104.5 188.10 66.359					0.9186 103.39 10.6863	0.9192 103.46 10.6933	0.9204 103.59 10.7072	0.9216 103.73 10.7209	0.9228 103.86 10.7344	0.9239 103.99 10.7478	0.9251 104.12 10.7610	0.9262 104.24 10.7741	0.9273 104.37 10.7871
104.6 188.28 66.841					0.9181 103.33 10.6802	0.9187 103.40 10.6872	0.9199 103.54 10.7011	0.9211 103.67 10.7149	0.9223 103.80 10.7285	0.9234 103.93 10.7419	0.9245 104.06 10.7552	0.9257 104.19 10.7683	0.9268 104.31 10.7813
104.7 188.46 67.326					0.9176 103.28 10.6741	0.9182 103.34 10.6812	0.9194 103.47 10.6951	0.9206 103.61 10.7089	0.9217 103.74 10.7225	0.9229 103.87 10.7360	0.9240 104.00 10.7493	0.9252 104.13 10.7625	0.9263 104.26 10.7755
104.8 188.64 67.813					0.9171 103.22 10.6680	0.9177 103.28 10.6751	0.9189 103.42 10.6891	0.9201 103.55 10.7029	0.9212 103.69 10.7166	0.9224 103.82 10.7301	0.9235 103.95 10.7434	0.9247 104.07 10.7567	0.9258 104.20 10.7697
104.9 188.82 68.303					0.9165 103.16 10.6619	0.9171 103.23 10.6690	0.9183 103.36 10.6830	0.9195 103.50 10.6969	0.9207 103.63 10.7106	0.9219 103.76 10.7242	0.9230 103.89 10.7376	0.9242 104.02 10.7508	0.9253 104.14 10.7639

TABLE 12 - CONTINUED

DENSITY OF COMPRESSED LIQUID APGON - CONTINUED

		TABLE ENTRIES											
1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA		1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL											
PSIA	12.000	14.696	25.000	50.000	75.000	100.000	150.000	200.000	250.000	300.000	350.000	400.000	450.000
ATH.	0.817	1.000	1.701	3.402	5.103	6.805	10.207	13.609	17.011	20.414	23.816	27.218	30.621
105.0 189.00 68.795					0.9160	0.9166	0.9178	0.9190	0.9202	0.9214	0.9225	0.9237	0.9248
					103.10	103.17	103.30	103.44	103.57	103.70	103.83	103.96	104.09
					10.6558	10.6629	10.6770	10.6909	10.7047	10.7183	10.7317	10.7450	10.7581
105.1 189.18 69.290					0.9155	0.9161	0.9173	0.9185	0.9197	0.9209	0.9220	0.9232	0.9243
					103.04	103.11	103.24	103.38	103.51	103.64	103.78	103.90	104.03
					10.6497	10.6568	10.6709	10.6849	10.6987	10.7123	10.7258	10.7391	10.7523
105.2 189.36 69.788					0.9150	0.9156	0.9168	0.9180	0.9192	0.9204	0.9215	0.9227	0.9238
					102.98	103.05	103.19	103.32	103.46	103.59	103.72	103.85	103.98
					10.6435	10.6507	10.6649	10.6789	10.6927	10.7064	10.7199	10.7333	10.7465
105.3 189.54 70.288					0.9144	0.9150	0.9163	0.9175	0.9187	0.9198	0.9210	0.9222	0.9233
					102.92	102.99	103.13	103.26	103.40	103.53	103.66	103.79	103.92
					10.6374	10.6446	10.6588	10.6728	10.6867	10.7004	10.7140	10.7274	10.7407
105.4 189.72 70.790					0.9139	0.9145	0.9157	0.9170	0.9181	0.9193	0.9205	0.9217	0.9228
					102.86	102.93	103.07	103.20	103.34	103.47	103.60	103.73	103.86
					10.6312	10.6384	10.6527	10.6668	10.6807	10.6945	10.7081	10.7215	10.7348
105.5 189.90 71.296					0.9134	0.9140	0.9152	0.9164	0.9176	0.9188	0.9200	0.9212	0.9223
					102.80	102.87	103.01	103.15	103.28	103.41	103.55	103.68	103.81
					10.6251	10.6323	10.6466	10.6608	10.6747	10.6885	10.7022	10.7157	10.7290
105.6 190.08 71.804					0.9128	0.9135	0.9147	0.9159	0.9171	0.9183	0.9195	0.9206	0.9218
					102.74	102.81	102.95	103.09	103.22	103.36	103.49	103.62	103.75
					10.6189	10.6262	10.6405	10.6547	10.6687	10.6826	10.6963	10.7098	10.7232
105.7 190.26 72.314					0.9123	0.9129	0.9142	0.9154	0.9166	0.9178	0.9190	0.9201	0.9213
					102.68	102.75	102.89	103.03	103.17	103.30	103.43	103.56	103.69
					10.6128	10.6200	10.6344	10.6487	10.6627	10.6766	10.6903	10.7039	10.7173
105.8 190.44 72.827					0.9118	0.9124	0.9136	0.9149	0.9161	0.9173	0.9185	0.9196	0.9208
					102.62	102.69	102.83	102.97	103.11	103.24	103.37	103.51	103.64
					10.6066	10.6139	10.6283	10.6426	10.6567	10.6706	10.6844	10.6980	10.7115
105.9 190.62 73.343					0.9112	0.9119	0.9131	0.9144	0.9156	0.9168	0.9180	0.9191	0.9203
					102.56	102.63	102.77	102.91	103.05	103.18	103.32	103.45	103.58
					10.6004	10.6077	10.6222	10.6365	10.6507	10.6647	10.6785	10.6921	10.7056
106.0 190.80 73.862					0.9107	0.9113	0.9126	0.9138	0.9150	0.9163	0.9174	0.9186	0.9198
					102.50	102.57	102.71	102.85	102.99	103.13	103.26	103.39	103.52
					10.5942	10.6016	10.6161	10.6305	10.6447	10.6587	10.6725	10.6862	10.6998
106.1 190.98 74.383					0.9102	0.9108	0.9121	0.9133	0.9145	0.9157	0.9169	0.9181	0.9193
					102.44	102.51	102.65	102.79	102.93	103.07	103.20	103.34	103.47
					10.5880	10.5954	10.6100	10.6244	10.6386	10.6527	10.6666	10.6803	10.6939
106.2 191.16 74.907					0.9096	0.9103	0.9115	0.9128	0.9140	0.9152	0.9164	0.9176	0.9188
					102.38	102.45	102.60	102.74	102.87	103.01	103.14	103.28	103.41
					10.5818	10.5892	10.6038	10.6183	10.6326	10.6467	10.6606	10.6744	10.6880
106.3 191.34 75.433					0.9097	0.9110	0.9123	0.9135	0.9147	0.9159	0.9171	0.9183	0.9193
					102.39	102.54	102.68	102.81	102.95	103.09	103.22	103.35	103.48
					10.5830	10.5977	10.6122	10.6265	10.6407	10.6547	10.6685	10.6821	10.6956
106.4 191.52 75.962					0.9092	0.9105	0.9117	0.9130	0.9142	0.9154	0.9166	0.9178	0.9188
					102.33	102.48	102.62	102.76	102.89	103.03	103.16	103.30	103.43
					10.5768	10.5915	10.6061	10.6205	10.6347	10.6487	10.6625	10.6762	10.6898
106.5 191.70 76.494					0.9087	0.9100	0.9112	0.9124	0.9137	0.9149	0.9161	0.9173	0.9183
					102.27	102.42	102.56	102.70	102.84	102.97	103.11	103.24	103.37
					10.5706	10.5854	10.6000	10.6144	10.6286	10.6427	10.6566	10.6703	10.6839
106.6 191.88 77.029					0.9081	0.9094	0.9107	0.9119	0.9132	0.9144	0.9156	0.9167	0.9177
					102.21	102.36	102.50	102.64	102.78	102.91	103.05	103.18	103.31
					10.5644	10.5792	10.5939	10.6083	10.6226	10.6367	10.6507	10.6645	10.6782
106.7 192.06 77.566					0.9076	0.9089	0.9102	0.9114	0.9126	0.9139	0.9151	0.9162	0.9172
					102.15	102.30	102.44	102.58	102.72	102.86	103.00	103.13	103.26
					10.5582	10.5731	10.5878	10.6023	10.6166	10.6307	10.6447	10.6585	10.6722
106.8 192.24 78.106					0.9071	0.9084	0.9096	0.9109	0.9121	0.9133	0.9145	0.9157	0.9167
					102.09	102.24	102.38	102.52	102.66	102.80	102.93	103.07	103.20
					10.5519	10.5669	10.5816	10.5962	10.6105	10.6247	10.6388	10.6526	10.6663
106.9 192.42 78.648					0.9065	0.9078	0.9091	0.9104	0.9116	0.9128	0.9140	0.9152	0.9162
					102.03	102.18	102.32	102.46	102.60	102.74	102.88	103.01	103.14
					10.5457	10.5607	10.5755	10.5901	10.6045	10.6187	10.6328	10.6467	10.6604

TABLE 12 - CONTINUED

DENSITY OF COMPRESSED LIQUID ARGON - CONTINUED

TABLE ENTRIES														
1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA				1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70 °F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL										
PSIA	12.000	14.696	25.000	50.000	75.000	100.000	150.000	200.000	250.000	300.000	350.000	400.000	450.000	
ATM.	0.817	1.000	1.701	3.402	5.103	6.805	10.207	13.609	17.011	20.414	23.816	27.218	30.621	
107.0						0.9060	0.9073	0.9086	0.9098	0.9111	0.9123	0.9135	0.9147	
192.60						101.97	102.12	102.26	102.40	102.54	102.68	102.82	102.95	
79.194						10.5395	10.5545	10.5693	10.5840	10.5985	10.6127	10.6269	10.6408	
107.1						0.9055	0.9068	0.9080	0.9093	0.9106	0.9118	0.9130	0.9142	
192.78						101.91	102.06	102.20	102.34	102.48	102.62	102.76	102.90	
79.742						10.5332	10.5483	10.5632	10.5779	10.5924	10.6067	10.6209	10.6349	
107.2						0.9049	0.9062	0.9075	0.9088	0.9100	0.9113	0.9125	0.9137	
192.96						101.85	102.00	102.14	102.28	102.43	102.56	102.70	102.84	
80.293						10.5269	10.5421	10.5570	10.5718	10.5863	10.6007	10.6149	10.6289	
107.3						0.9044	0.9057	0.9070	0.9083	0.9095	0.9108	0.9120	0.9132	
193.14						101.79	101.94	102.08	102.23	102.37	102.51	102.64	102.78	
80.846						10.5207	10.5359	10.5509	10.5656	10.5802	10.5947	10.6089	10.6230	
107.4						0.9038	0.9052	0.9065	0.9077	0.9090	0.9102	0.9115	0.9127	
193.32						101.73	101.88	102.02	102.17	102.31	102.45	102.59	102.72	
81.403						10.5144	10.5296	10.5447	10.5595	10.5742	10.5886	10.6029	10.6170	
107.5						0.9033	0.9046	0.9059	0.9072	0.9085	0.9097	0.9109	0.9122	
193.50						101.67	101.82	101.96	102.11	102.25	102.39	102.53	102.67	
81.962						10.5081	10.5234	10.5385	10.5534	10.5681	10.5826	10.5969	10.6111	
107.6						0.9028	0.9041	0.9054	0.9067	0.9079	0.9092	0.9104	0.9116	
193.68						101.61	101.76	101.90	102.05	102.19	102.33	102.47	102.61	
82.524						10.5018	10.5172	10.5323	10.5472	10.5620	10.5765	10.5909	10.6051	
107.7						0.9022	0.9036	0.9049	0.9061	0.9074	0.9087	0.9099	0.9111	
193.86						101.55	101.70	101.84	101.99	102.13	102.27	102.41	102.55	
83.088						10.4955	10.5109	10.5261	10.5411	10.5559	10.5705	10.5849	10.5992	
107.8						0.9017	0.9030	0.9043	0.9056	0.9069	0.9082	0.9094	0.9106	
194.04						101.49	101.64	101.78	101.93	102.07	102.21	102.35	102.49	
83.656						10.4892	10.5047	10.5199	10.5349	10.5498	10.5644	10.5789	10.5932	
107.9						0.9011	0.9025	0.9038	0.9051	0.9064	0.9076	0.9089	0.9101	
194.22						101.43	101.58	101.72	101.87	102.01	102.16	102.30	102.43	
84.226						10.4829	10.4984	10.5137	10.5288	10.5437	10.5584	10.5729	10.5872	
108.0						0.9006	0.9019	0.9033	0.9046	0.9058	0.9071	0.9084	0.9096	
194.40						101.36	101.51	101.66	101.81	101.95	102.10	102.24	102.38	
84.799						10.4766	10.4921	10.5075	10.5226	10.5375	10.5523	10.5668	10.5812	
108.1						0.9001	0.9014	0.9027	0.9040	0.9053	0.9066	0.9078	0.9091	
194.58						101.30	101.45	101.60	101.75	101.89	102.04	102.18	102.32	
85.375						10.4702	10.4858	10.5012	10.5164	10.5314	10.5462	10.5608	10.5752	
108.2						0.8995	0.9009	0.9022	0.9035	0.9048	0.9061	0.9073	0.9086	
194.76						101.24	101.39	101.54	101.69	101.84	101.98	102.12	102.26	
85.954						10.4639	10.4795	10.4950	10.5102	10.5253	10.5401	10.5548	10.5692	
108.3						0.8990	0.9003	0.9016	0.9030	0.9043	0.9055	0.9068	0.9080	
194.94						101.18	101.33	101.48	101.63	101.78	101.92	102.06	102.20	
86.535						10.4575	10.4732	10.4887	10.5040	10.5191	10.5340	10.5487	10.5632	
108.4						0.8984	0.8998	0.9011	0.9024	0.9037	0.9050	0.9063	0.9075	
195.12						101.12	101.27	101.42	101.57	101.72	101.86	102.00	102.14	
87.120						10.4512	10.4669	10.4825	10.4978	10.5130	10.5279	10.5427	10.5572	
108.5						0.8979	0.8992	0.9006	0.9019	0.9032	0.9045	0.9058	0.9070	
195.30						101.06	101.21	101.36	101.51	101.66	101.80	101.94	102.09	
87.707						10.4448	10.4606	10.4762	10.4916	10.5068	10.5218	10.5366	10.5512	
108.6						0.8973	0.8987	0.9000	0.9014	0.9027	0.9040	0.9052	0.9065	
195.48						100.99	101.15	101.30	101.45	101.60	101.74	101.89	102.03	
88.297						10.4384	10.4543	10.4700	10.4854	10.5006	10.5157	10.5305	10.5452	
108.7						0.8968	0.8981	0.8995	0.9008	0.9021	0.9034	0.9047	0.9060	
195.66						100.93	101.09	101.24	101.39	101.54	101.68	101.83	101.97	
88.890						10.4320	10.4480	10.4637	10.4792	10.4945	10.5096	10.5244	10.5391	
108.8						0.8962	0.8976	0.8990	0.9003	0.9016	0.9029	0.9042	0.9055	
195.84						100.87	101.03	101.18	101.33	101.48	101.62	101.77	101.91	
89.486						10.4256	10.4416	10.4574	10.4730	10.4883	10.5034	10.5184	10.5331	
108.9						0.8957	0.8970	0.8984	0.8998	0.9011	0.9024	0.9037	0.9049	
196.02						100.81	100.96	101.12	101.27	101.42	101.56	101.71	101.85	
90.084						10.4192	10.4353	10.4511	10.4667	10.4821	10.4973	10.5123	10.5271	

TABLE 12 - CONTINUED

DENSITY OF COMPRESSED LIQUID ARGON - CONTINUED

				TABLE ENTRIES										
1. TEMPERATURE, °K 2. TEMPERATURE, °R 3. VAPOR PRESSURE, PSIA				1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL										
PSIA	12.000	14.696	25.000	50.000	75.000	100.000	150.000	200.000	250.000	300.000	350.000	400.000	450.000	
ATM.	0.817	1.000	1.701	3.402	5.103	6.805	10.207	13.609	17.011	20.414	23.816	27.218	30.621	
109.0 196.20 90.686						0.8951 100.75 10.4128	0.8955 100.90 10.4289	0.8979 101.06 10.4448	0.8992 101.21 10.4605	0.9005 101.36 10.4759	0.9019 101.50 10.4911	0.9031 101.65 10.5062	0.9044 101.79 10.5210	
109.1 196.38 91.290						0.8946 100.69 10.4064	0.8960 100.84 10.4226	0.8973 101.00 10.4385	0.8987 101.15 10.4542	0.9000 101.30 10.4697	0.9013 101.45 10.4850	0.9026 101.59 10.5001	0.9039 101.74 10.5149	
109.2 196.56 91.898						0.8940 100.62 10.4000	0.8954 100.78 10.4162	0.8968 100.93 10.4322	0.8981 101.09 10.4479	0.8995 101.24 10.4635	0.9008 101.39 10.4788	0.9021 101.53 10.4939	0.9034 101.68 10.5089	
109.3 196.74 92.508						0.8935 100.56 10.3935	0.8949 100.72 10.4098	0.8962 100.87 10.4259	0.8976 101.03 10.4417	0.8989 101.18 10.4573	0.9003 101.33 10.4726	0.9016 101.47 10.4878	0.9029 101.62 10.5028	
109.4 196.92 93.121						0.8929 100.50 10.3871	0.8943 100.66 10.4034	0.8957 100.81 10.4195	0.8971 100.97 10.4354	0.8984 101.12 10.4510	0.8997 101.27 10.4665	0.9010 101.41 10.4817	0.9023 101.56 10.4967	
109.5 197.10 93.737						0.8924 100.44 10.3806	0.8938 100.59 10.3970	0.8951 100.75 10.4132	0.8965 100.90 10.4291	0.8979 101.06 10.4448	0.8992 101.21 10.4603	0.9005 101.35 10.4756	0.9018 101.50 10.4906	
109.6 197.28 94.356						0.8918 100.37 10.3742	0.8932 100.53 10.3906	0.8946 100.69 10.4068	0.8960 100.84 10.4228	0.8973 101.00 10.4386	0.8987 101.15 10.4541	0.9000 101.29 10.4694	0.9013 101.44 10.4846	
109.7 197.46 94.978						0.8912 100.31 10.3677	0.8927 100.47 10.3842	0.8941 100.63 10.4005	0.8954 100.78 10.4165	0.8968 100.94 10.4323	0.8981 101.09 10.4479	0.8995 101.24 10.4633	0.9008 101.38 10.4785	
109.8 197.64 95.603						0.8907 100.25 10.3612	0.8921 100.41 10.3778	0.8935 100.57 10.3941	0.8949 100.72 10.4102	0.8963 100.88 10.4261	0.8976 101.03 10.4417	0.8989 101.18 10.4571	0.9002 101.32 10.4723	
109.9 197.82 96.231						0.8901 100.18 10.3547	0.8916 100.35 10.3713	0.8930 100.50 10.3877	0.8943 100.66 10.4039	0.8957 100.81 10.4198	0.8971 100.97 10.4355	0.8984 101.12 10.4510	0.8997 101.26 10.4662	
110.0 198.00 96.862						0.8896 100.12 10.3482	0.8910 100.28 10.3649	0.8924 100.44 10.3813	0.8938 100.60 10.3975	0.8952 100.75 10.4135	0.8965 100.91 10.4293	0.8979 101.06 10.4448	0.8992 101.20 10.4601	
110.1 198.18 97.495						0.8890 100.06 10.3417	0.8904 100.22 10.3585	0.8919 100.38 10.3750	0.8933 100.54 10.3912	0.8946 100.69 10.4072	0.8960 100.85 10.4230	0.8973 101.00 10.4386	0.8987 101.15 10.4540	
110.2 198.36 98.132						0.8884 100.00 10.3352	0.8899 100.16 10.3520	0.8913 100.32 10.3686	0.8927 100.48 10.3849	0.8941 100.63 10.4009	0.8955 100.79 10.4168	0.8968 100.94 10.4324	0.8981 101.09 10.4479	
110.3 198.54 98.772						0.8879 99.93 10.3287	0.8893 100.10 10.3455	0.8908 100.26 10.3621	0.8922 100.42 10.3785	0.8936 100.57 10.3946	0.8949 100.73 10.4106	0.8963 100.88 10.4262	0.8976 101.03 10.4417	
110.4 198.72 99.415						0.8873 99.87 10.3221	0.8888 100.03 10.3390	0.8902 100.19 10.3557	0.8916 100.35 10.3721	0.8930 100.51 10.3883	0.8944 100.66 10.4043	0.8957 100.82 10.4200	0.8971 100.97 10.4356	
110.5 198.90 100.060							0.8882 99.97 10.3326	0.8897 100.13 10.3493	0.8911 100.29 10.3658	0.8925 100.45 10.3820	0.8938 100.60 10.3980	0.8952 100.76 10.4138	0.8965 100.91 10.4294	
110.6 199.08 100.729							0.8877 99.91 10.3261	0.8891 100.07 10.3429	0.8905 100.23 10.3594	0.8919 100.39 10.3757	0.8933 100.54 10.3918	0.8947 100.70 10.4076	0.8960 100.85 10.4232	
110.7 199.26 101.361							0.8871 99.84 10.3196	0.8885 100.01 10.3364	0.8900 100.17 10.3533	0.8914 100.33 10.3694	0.8928 100.48 10.3855	0.8941 100.64 10.4014	0.8955 100.79 10.4171	
110.8 199.44 102.016							0.8865 99.78 10.3130	0.8880 99.95 10.3300	0.8894 100.11 10.3466	0.8908 100.27 10.3630	0.8922 100.42 10.3792	0.8936 100.58 10.3952	0.8950 100.73 10.4109	
110.9 199.62 102.674							0.8860 99.72 10.3065	0.8874 99.88 10.3235	0.8889 100.04 10.3402	0.8903 100.20 10.3567	0.8917 100.36 10.3729	0.8931 100.52 10.3889	0.8944 100.67 10.4047	

TABLE 12 - CONTINUED

DENSITY OF COMPRESSED LIQUID ARGON - CONTINUED

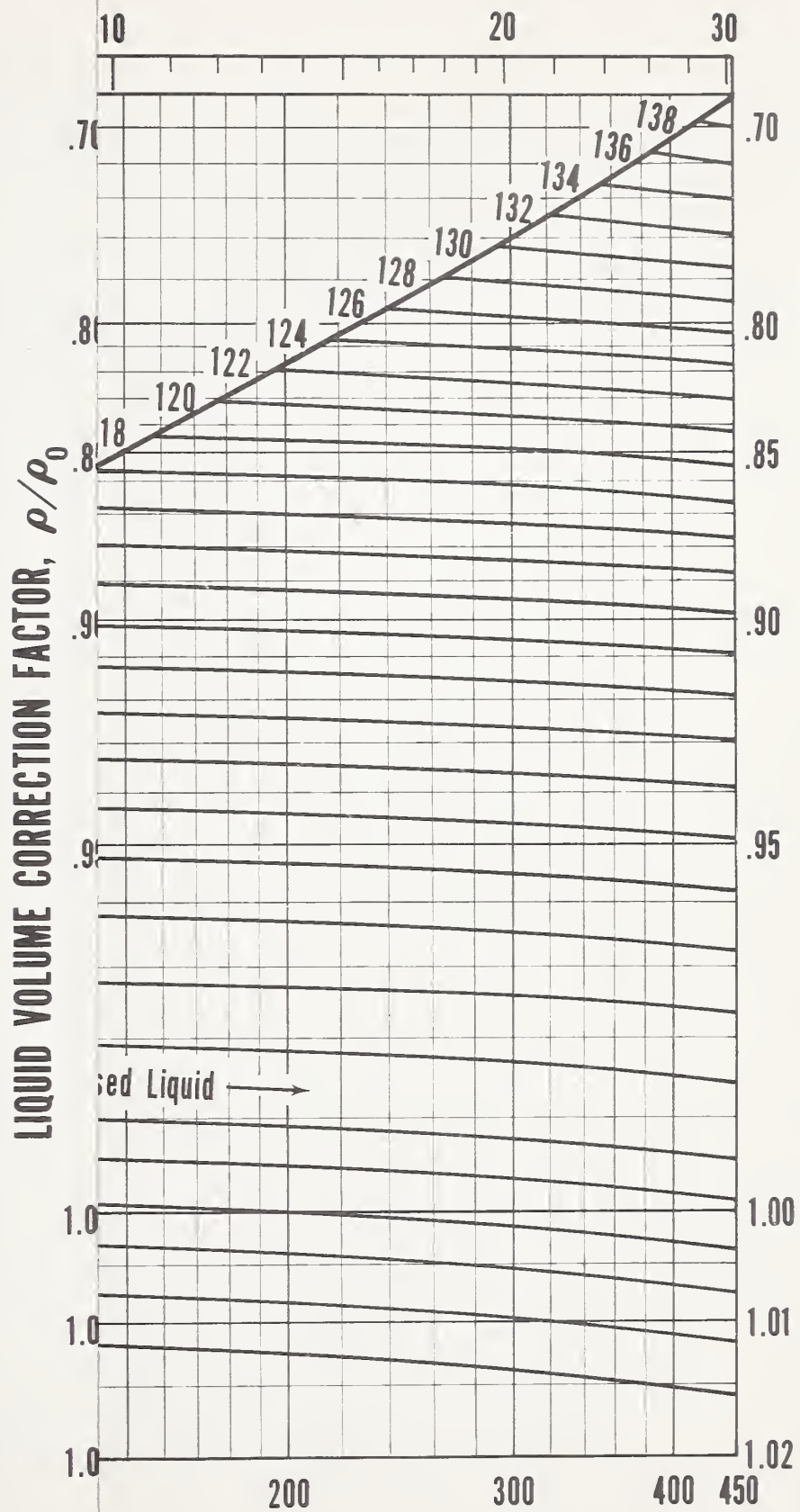
				TABLE ENTRIES									
1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA				1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL									
PSIA ATM.	12.000 0.817	14.696 1.000	25.000 1.701	50.000 3.402	75.000 5.103	100.000 6.805	150.000 10.207	200.000 13.609	250.000 17.011	300.000 20.414	350.000 23.816	400.000 27.218	450.000 30.621
111.0 199.80 103.334							0.8854 99.66 10.3000	0.8869 99.82 10.3170	0.8883 99.98 10.3338	0.8897 100.14 10.3503	0.8911 100.30 10.3666	0.8925 100.46 10.3827	0.8939 100.61 10.3985
112.0 201.60 110.113							0.8798 99.02 10.2341	0.8813 99.19 10.2518	0.8828 99.36 10.2692	0.8842 99.52 10.2863	0.8857 99.69 10.3032	0.8871 99.85 10.3198	0.8885 100.01 10.3362
113.0 203.40 117.204							0.8740 98.37 10.1672	0.8756 98.55 10.1856	0.8771 98.72 10.2036	0.8787 98.90 10.2214	0.8802 99.06 10.2389	0.8816 99.23 10.2561	0.8831 99.39 10.2731
114.0 205.20 124.617							0.8682 97.71 10.0992	0.8698 97.90 10.1183	0.8714 98.08 10.1371	0.8730 98.26 10.1556	0.8746 98.43 10.1737	0.8761 98.61 10.1915	0.8776 98.78 10.2091
115.0 207.00 132.359							0.8622 97.04 10.0301	0.8639 97.24 10.0500	0.8656 97.43 10.0695	0.8673 97.61 10.0887	0.8689 97.79 10.1076	0.8705 97.97 10.1261	0.8720 98.15 10.1443
116.0 208.80 140.440							0.8562 96.36 9.9598	0.8580 96.56 9.9805	0.8597 96.76 10.0009	0.8614 96.95 10.0208	0.8631 97.14 10.0404	0.8648 97.33 10.0596	0.8664 97.51 10.0785
117.0 210.60 148.867							0.8500 95.67 9.8881	0.8519 95.88 9.9098	0.8537 96.09 9.9310	0.8555 96.29 9.9518	0.8572 96.48 9.9722	0.8590 96.68 9.9922	0.8606 96.87 10.0118
118.0 212.40 157.650								0.8457 95.18 9.8377	0.8476 95.40 9.8598	0.8494 95.61 9.8815	0.8513 95.81 9.9028	0.8531 96.01 9.9236	0.8548 96.21 9.9441
119.0 214.20 166.796								0.8394 94.47 9.7641	0.8413 94.70 9.7873	0.8433 94.91 9.8100	0.8452 95.13 9.8322	0.8471 95.34 9.8539	0.8489 95.55 9.8752
120.0 216.00 176.314								0.8329 93.74 9.6890	0.8350 93.98 9.7133	0.8370 94.21 9.7370	0.8390 94.43 9.7602	0.8410 94.65 9.7829	0.8429 94.87 9.8051
121.0 217.80 186.213								0.8263 93.00 9.6122	0.8285 93.25 9.6377	0.8306 93.49 9.6626	0.8327 93.72 9.6869	0.8348 93.95 9.7106	0.8367 94.18 9.7338
122.0 219.60 196.503								0.8195 92.24 9.5335	0.8218 92.50 9.5603	0.8241 92.75 9.5865	0.8263 93.00 9.6120	0.8284 93.24 9.6368	0.8305 93.47 9.6611
123.0 221.40 207.192									0.8150 91.73 9.4811	0.8174 92.00 9.5086	0.8197 92.26 9.5354	0.8219 92.51 9.5615	0.8241 92.76 9.5869
124.0 223.20 218.290									0.8080 90.95 9.3997	0.8105 91.23 9.4288	0.8130 91.50 9.4570	0.8153 91.76 9.4845	0.8176 92.02 9.5112
125.0 225.00 229.806									0.8008 90.14 9.3161	0.8035 90.43 9.3469	0.8060 90.72 9.3767	0.8085 91.00 9.4056	0.8109 91.27 9.4337
126.0 226.80 241.750									0.7934 89.30 9.2299	0.7962 89.62 9.2626	0.7990 89.92 9.2941	0.8016 90.22 9.3247	0.8041 90.51 9.3543
127.0 228.60 254.132										0.7888 88.78 9.1757	0.7917 89.10 9.2092	0.7944 89.42 9.2416	0.7971 89.72 9.2729
128.0 230.40 266.962										0.7810 87.91 9.0859	0.7841 88.25 9.1216	0.7871 88.59 9.1561	0.7899 88.91 9.1893
129.0 232.20 280.249										0.7730 87.01 8.9928	0.7763 87.38 9.0311	0.7795 87.73 9.0678	0.7825 88.08 9.1031
130.0 234.00 294.006										0.7647 86.07 8.8960	0.7683 86.47 8.9372	0.7716 86.85 8.9765	0.7749 87.22 9.0142

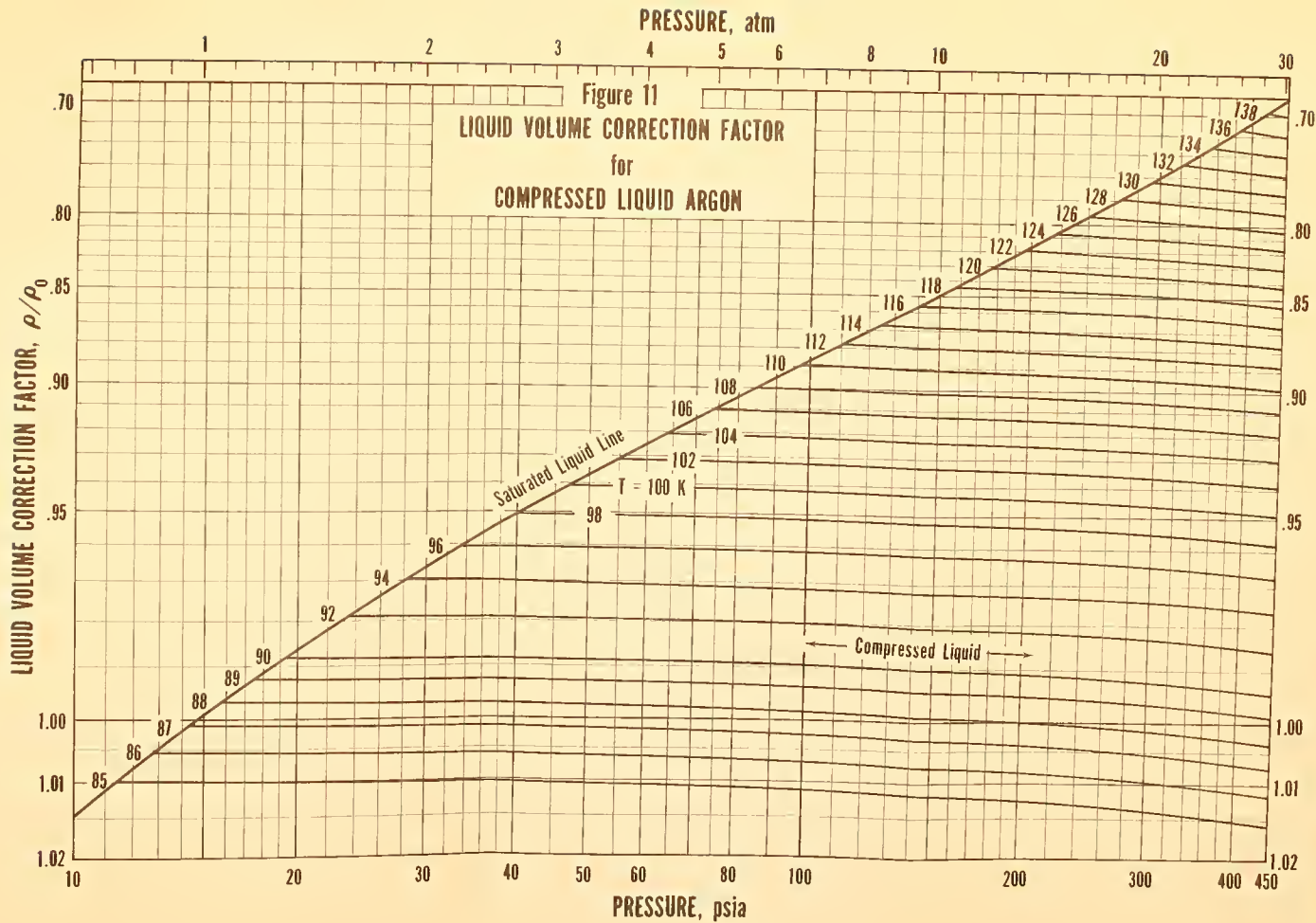
TABLE 12 - CONTINUED

DENSITY OF COMPRESSED LIQUID ARGON - CONTINUED

				TABLE ENTRIES									
1. TEMPERATURE, K 2. TEMPERATURE, P 3. VAPOR PRESSURE, PSIA				1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL									
PSIA ATM.	12.000 0.817	14.696 1.000	25.000 1.701	50.000 3.402	75.000 5.103	100.000 6.805	150.000 10.207	200.000 13.699	250.000 17.011	300.000 20.414	350.000 23.816	400.000 27.218	450.000 30.621
131.0 235.80 308.243											0.7599 85.53 9.8395	0.7635 85.93 9.8818	0.7670 86.33 9.9222
132.0 237.60 322.971											0.7511 84.54 9.7375	0.7550 84.98 9.7833	0.7589 85.40 9.8268
133.0 239.40 336.201											0.7419 83.50 9.6305	0.7462 83.93 9.6803	0.7502 84.44 9.7274
134.0 241.20 353.945												0.7369 82.94 9.5722	0.7413 83.43 9.6235
135.0 243.00 370.217												0.7271 81.83 9.4580	0.7319 82.38 9.5143
136.0 244.80 387.028												0.7166 80.66 9.3365	0.7220 81.26 9.3990
137.0 246.60 404.391													0.7115 80.09 9.2763
138.0 248.40 422.321													0.7001 78.80 9.1444
139.0 250.20 440.831													0.6978 77.41 9.0011









9. PARAHYDROGEN

The data for parahydrogen tabulated here are based on the monograph by Roder, et al. (1965). Additional, extensive tables of values based on this source were prepared by McCarty and Weber (1972) for NASA. The tables for the saturated liquid were calculated using the explicit equations for vapor pressure (Weber, et al., 1962) and saturated liquid density (Roder, et al., 1963) which were incorporated unchanged into the final compilation (Roder, et al., 1965). The values for temperatures near room temperature were taken from Hilsenrath, et al. (1955), using a high order interpolation. This is the source used by the experimenters in their determination of the liquid densities. The CGA pamphlet P-6 cites Dean (1961), who also presents a high order interpolation of Hilsenrath's values.

Values near room temperature are given in table 13, uncertainties for the data in table 14, values for the saturated liquid are given in table 15, and values for the compressed liquid are shown in table 16. As stated before, these values do not differ from those presented in

Table 13

Density of Parahydrogen at 1 Atmosphere Near Room Temperature

Temperature	Density		
	gram-mole/cm ³	lb/ft ³	lb/gal
0 C	0.000044588	0.005611	0.000750
68 F	0.000041547	0.005229	0.000699
70 F	0.000041390	0.005209	0.000696
Temperature	Volume		
	cm ³ /gram-mole	ft ³ /lb	gal/lb
0 C	22428	178.21	1333.1
68 F	24069	191.25	1430.6
70 F	24160	191.97	1436.1
Temperature	Density Ratios and Equivalent volumes		
	$\frac{\text{density at NBP}^*}{\text{density at the temperature indicated}}$		
	dimensionless	$\frac{\text{lb/gal}}{\text{lb/ft}^3} = \text{ft}^3/\text{gal}$	
0 C	787.50	105.273	
68 F	845.13	112.98	
70 F	848.34	113.41	

* 4.4190 lb/ft³ or 0.59074 lb/gal

the CGA pamphlet P-6. An astute observer may detect a difference of one part in 4000 in the density at the NBP between this table and pamphlet P-6, but that difference is caused only by accumulative rounding errors.

The properties presented here pertain to parahydrogen. Specifications for delivery of parahydrogen are usually stated as 95% parahydrogen with the remainder being orthohydrogen. As a matter of fact, producers do not send less than 97% parahydrogen to storage tanks, and the liquid when shipped is, or is very close to being, equilibrium hydrogen. Equilibrium parahydrogen is 99.79% para at the NBP, and the difference between it and 95% parahydrogen amounts to about 0.008 K or about 2 mm in pressure. It is easy to see that sophisticated equipment is required to detect ortho-para composition. The matter of composition is mentioned because the amount of orthohydrogen present has a very pronounced effect on the length of storage but only a very slight effect on the density.

Table 14
Uncertainties in the Data for Parahydrogen

variable	uncertainty	range of temperature
temperature	0.02 K 0.015 K	triple point to critical point room temperature
volume	0.1% increases to 0.3% 0.01%	triple point to 32 K near critical room temperature
pressure	0.05% 0.01%	triple point to critical point room temperature

The specific volume for the saturated liquid is plotted in figure 12. The liquid volume correction factor for the saturated liquid is shown in figure 13 and the liquid volume correction factor for the compressed liquid is plotted in figure 14.

TABLE 15

SATURATED LIQUID PARAHYDROGEN

PRESSURE		TEMPERATURE		DENSITY		VOLUME CM ³ / GRAM-MOLE	LB/GAL	DENSITY RATIO		
ATM	PSIA	KELVIN	RANKINE	GRAM-MOLE/ CM ³	LB/FT ³			LIQ VOLUME CORRECTION FACTOR	NTP (70°F) CORRECTION FACTOR	VOLUME FT ³ /GAL
0.0695	1.021	13.803	24.85	0.038206	4.8083	26.174	0.64277	1.5558	1.0881	123.40
0.0730	1.073	13.889	25.00	0.038170	4.8038	26.198	0.64217	1.5572	1.0871	123.28
0.0778	1.143	14.000	25.20	0.038124	4.7979	26.230	0.64139	1.5591	1.0857	123.13
0.0995	1.462	14.444	26.00	0.037936	4.7743	26.360	0.63824	1.5668	1.0804	122.53
0.133	1.950	15.000	27.00	0.037698	4.7443	26.527	0.63422	1.5767	1.0736	121.75
0.136	2.000	15.051	27.09	0.037676	4.7415	26.542	0.63385	1.5777	1.0730	121.68
0.174	2.553	15.556	28.00	0.037454	4.7136	26.700	0.63012	1.5870	1.0667	120.97
0.204	3.000	15.906	28.63	0.037297	4.6939	26.812	0.62748	1.5937	1.0622	120.46
0.213	3.129	16.000	28.80	0.037255	4.6885	26.842	0.62677	1.5955	1.0610	120.32
0.224	3.288	16.111	29.00	0.037204	4.6822	26.879	0.62592	1.5977	1.0595	120.16
0.272	4.000	16.567	29.82	0.036995	4.6558	27.031	0.62240	1.6067	1.0536	119.48
0.284	4.170	16.667	30.00	0.036949	4.6500	27.065	0.62162	1.6087	1.0523	119.34
0.325	4.777	17.000	30.60	0.036792	4.6303	27.180	0.61899	1.6155	1.0478	118.83
0.340	5.000	17.115	30.81	0.036738	4.6235	27.220	0.61807	1.6179	1.0463	118.65
0.355	5.217	17.222	31.00	0.036687	4.6171	27.258	0.61721	1.6202	1.0448	118.49
0.408	6.000	17.586	31.65	0.036511	4.5950	27.389	0.61426	1.6280	1.0398	117.92
0.439	6.446	17.778	32.00	0.036418	4.5832	27.459	0.61269	1.6322	1.0371	117.62
0.476	6.994	18.000	32.40	0.036308	4.5694	27.542	0.61084	1.6371	1.0340	117.27
0.476	7.000	18.002	32.40	0.036307	4.5693	27.543	0.61082	1.6371	1.0340	117.26
0.536	7.877	18.333	33.00	0.036141	4.5484	27.669	0.60804	1.6446	1.0293	116.73
0.544	8.000	18.377	33.08	0.036119	4.5456	27.686	0.60766	1.6457	1.0286	116.66
0.612	9.000	18.720	33.70	0.035945	4.5237	27.821	0.60473	1.6536	1.0237	116.09
0.648	9.527	18.889	34.00	0.035857	4.5127	27.888	0.60326	1.6577	1.0212	115.81
0.673	9.885	19.000	34.20	0.035799	4.5054	27.933	0.60228	1.6604	1.0195	115.62
0.680	10.000	19.035	34.26	0.035781	4.5031	27.948	0.60197	1.6612	1.0190	115.56
0.748	11.000	19.328	34.79	0.035626	4.4836	28.059	0.59937	1.6684	1.0146	115.06
0.777	11.415	19.444	35.00	0.035564	4.4758	28.118	0.59833	1.6713	1.0128	114.86
0.817	12.000	19.603	35.29	0.035479	4.4651	28.185	0.59690	1.6753	1.0104	114.59
0.885	13.000	19.861	35.75	0.035339	4.4474	28.298	0.59453	1.6820	1.0064	114.14
0.923	13.561	20.000	36.00	0.035262	4.4378	28.359	0.59325	1.6856	1.0042	113.89
0.953	14.000	20.106	36.19	0.035204	4.4305	28.406	0.59227	1.6884	1.0026	113.70
1.000	14.696	20.268	36.48	0.035113	4.4190	28.479	0.59074	1.6928	1.0000	113.41
1.021	15.000	20.338	36.61	0.035074	4.4141	28.511	0.59008	1.6947	0.9989	113.28
1.088	15.984	20.556	37.00	0.034951	4.3986	28.612	0.58800	1.7007	0.9954	112.88
1.089	16.000	20.559	37.01	0.034949	4.3983	28.613	0.58797	1.7008	0.9953	112.88
1.157	17.000	20.771	37.39	0.034827	4.3830	28.713	0.58593	1.7067	0.9919	112.48
1.225	18.000	20.973	37.75	0.034709	4.3682	28.811	0.58394	1.7125	0.9885	112.10
1.233	18.127	21.000	37.80	0.034694	4.3662	28.824	0.58368	1.7133	0.9880	112.05
1.272	18.694	21.111	38.00	0.034628	4.3580	28.878	0.58258	1.7165	0.9862	111.84
1.293	19.000	21.170	38.11	0.034593	4.3536	28.907	0.58199	1.7182	0.9852	111.73
1.361	20.000	21.358	38.44	0.034481	4.3395	29.001	0.58011	1.7238	0.9820	111.37

* Equivalent cubic feet (NTP) per gallon of liquid

TABLE 15 CONTINUED

SATURATED LIQUID PARAHYDROGEN

PRESSURE			TEMPERATURE		DENSITY		VOLUME		LIQ VOLUME CORRECTION FACTOR	DENSITY RATIO	
ATM	PSIA	KELVIN	RANKINE	GRAM-MOLE/ CM ³	LB/FT ³	LB/GAL	CM ³ / GRAM-MOLE	FT ³ /LB		GAL/LB	NTP (70°F) CORRECTION FACTOR
1.429	21.000	21.539	38.77	0.034372	4.3258	0.57827	29.093	0.23117	1.7293	0.9789	111.01
1.478	21.723	21.667	39.00	0.034294	4.3160	0.57696	29.159	0.23170	1.7332	0.9767	110.76
1.497	22.000	21.715	39.09	0.034265	4.3123	0.57647	29.184	0.23189	1.7347	0.9758	110.67
1.565	23.000	21.884	39.39	0.034160	4.2991	0.57471	29.274	0.23261	1.7400	0.9729	110.33
1.613	23.701	22.000	39.60	0.034088	4.2901	0.57350	29.336	0.23310	1.7437	0.9708	110.10
1.633	24.000	22.049	39.69	0.034058	4.2862	0.57298	29.362	0.23331	1.7452	0.9699	110.00
1.701	25.000	22.208	39.97	0.033957	4.2735	0.57129	29.449	0.23400	1.7504	0.9671	109.67
1.707	25.089	22.222	40.00	0.033948	4.2724	0.57114	29.457	0.23406	1.7509	0.9668	109.65
1.769	26.000	22.363	40.25	0.033858	4.2611	0.56963	29.535	0.23468	1.7555	0.9643	109.35
1.837	27.000	22.514	40.53	0.033761	4.2489	0.56799	29.620	0.23536	1.7606	0.9615	109.04
1.905	28.000	22.661	40.79	0.033665	4.2368	0.56638	29.704	0.23603	1.7656	0.9588	108.73
1.961	28.813	22.778	41.00	0.033589	4.2272	0.56509	29.772	0.23656	1.7696	0.9566	108.48
1.973	29.000	22.804	41.05	0.033571	4.2250	0.56480	29.787	0.23669	1.7705	0.9561	108.43
2.000	29.392	22.859	41.15	0.033535	4.2204	0.56418	29.820	0.23695	1.7725	0.9550	108.31
2.041	30.000	22.944	41.30	0.033478	4.2133	0.56324	29.870	0.23734	1.7755	0.9534	108.13
2.069	30.407	23.000	41.40	0.033441	4.2086	0.56260	29.903	0.23761	1.7774	0.9524	108.01
2.109	31.000	23.081	41.54	0.033387	4.2018	0.56169	29.952	0.23800	1.7803	0.9508	107.83
2.177	32.000	23.214	41.79	0.033296	4.1904	0.56017	30.033	0.23864	1.7852	0.9483	107.54
2.240	32.914	23.333	42.00	0.033215	4.1801	0.55880	30.107	0.23923	1.7896	0.9459	107.28
2.246	33.000	23.344	42.02	0.033207	4.1791	0.55867	30.114	0.23928	1.7900	0.9457	107.25
2.314	34.000	23.472	42.25	0.033119	4.1680	0.55719	30.194	0.23992	1.7947	0.9432	106.97
2.382	35.000	23.597	42.47	0.033032	4.1571	0.55572	30.274	0.24057	1.7995	0.9407	106.68
2.450	36.000	23.720	42.70	0.032945	4.1462	0.55427	30.353	0.24119	1.8042	0.9383	106.41
2.518	37.000	23.840	42.91	0.032860	4.1354	0.55283	30.432	0.24181	1.8089	0.9358	106.13
2.546	37.415	23.889	43.00	0.032825	4.1310	0.55224	30.465	0.24207	1.8108	0.9348	106.02
2.586	38.000	23.958	43.12	0.032775	4.1248	0.55141	30.511	0.24244	1.8135	0.9334	105.86
2.611	38.364	24.000	43.20	0.032745	4.1209	0.55089	30.539	0.24266	1.8152	0.9325	105.76
2.654	39.000	24.073	43.33	0.032691	4.1143	0.55000	30.589	0.24306	1.8182	0.9310	105.59
2.722	40.000	24.187	43.54	0.032608	4.1038	0.54860	30.667	0.24368	1.8228	0.9287	105.32
2.790	41.000	24.299	43.74	0.032526	4.0934	0.54721	30.745	0.24429	1.8274	0.9263	105.05
2.858	42.000	24.408	43.93	0.032444	4.0832	0.54584	30.822	0.24491	1.8320	0.9240	104.79
2.881	42.334	24.444	44.00	0.032417	4.0798	0.54538	30.848	0.24511	1.8336	0.9232	104.70
2.926	43.000	24.516	44.13	0.032363	4.0730	0.54448	30.899	0.24552	1.8366	0.9217	104.53
2.994	44.000	24.622	44.32	0.032283	4.0629	0.54312	30.976	0.24613	1.8412	0.9194	104.27
3.000	44.088	24.632	44.34	0.032276	4.0620	0.54301	30.983	0.24619	1.8416	0.9192	104.24
3.062	45.000	24.727	44.51	0.032203	4.0528	0.54178	31.053	0.24674	1.8458	0.9171	104.01
3.130	46.000	24.829	44.69	0.032124	4.0428	0.54045	31.129	0.24735	1.8503	0.9149	103.75
3.198	47.000	24.931	44.88	0.032045	4.0329	0.53912	31.206	0.24796	1.8549	0.9126	103.50
3.245	47.693	25.000	45.00	0.031991	4.0261	0.53821	31.259	0.24838	1.8580	0.9111	103.32
3.266	48.000	25.030	45.05	0.031967	4.0231	0.53781	31.282	0.24857	1.8594	0.9104	103.25
3.334	49.000	25.129	45.23	0.031889	4.0133	0.53650	31.359	0.24917	1.8639	0.9082	102.99
3.402	50.000	25.226	45.41	0.031812	4.0035	0.53520	31.435	0.24978	1.8685	0.9060	102.74
3.470	51.000	25.321	45.58	0.031735	3.9939	0.53390	31.511	0.25038	1.8730	0.9038	102.50
3.538	52.000	25.415	45.75	0.031658	3.9842	0.53262	31.587	0.25099	1.8775	0.9016	102.25
3.606	53.000	25.508	45.91	0.031582	3.9747	0.53133	31.663	0.25159	1.8821	0.8994	102.00

TABLE 15 CONTINUED

SATURATED LIQUID PARAHYDROGEN

PRESSURE		TEMPERATURE		DENSITY GRAM-MOLE/ CM ³	LB/FT ³	LB/GAL	CM ³ / GRAM-MOLE	VOLUME FT ³ /LB	GAL/LB	LIQ VOLUME CORRECTION FACTOR	DENSITY RATIO	
ATM	PSIA	KELVIN	RANKINE								NTP (70°F)	VOLUME* FT ³ /GAL
3.641	53.515	25.556	46.00	0.031543	3.9698	0.53068	31.703	0.25191	1.8844	0.8983		101.88
3.674	56.000	25.600	46.08	0.031506	3.9651	0.53006	31.739	0.25220	1.8866	0.8973		101.76
3.743	55.000	25.691	46.24	0.031431	3.9556	0.52879	31.816	0.25280	1.8911	0.8951		101.52
3.811	56.000	25.780	46.40	0.031356	3.9462	0.52753	31.892	0.25341	1.8956	0.8930		101.27
3.879	57.000	25.868	46.56	0.031281	3.9368	0.52627	31.968	0.25401	1.9002	0.8909		101.03
3.947	58.000	25.955	46.72	0.031207	3.9274	0.52502	32.044	0.25462	1.9047	0.8887		100.79
3.982	58.517	26.000	46.80	0.031168	3.9226	0.52437	32.084	0.25493	1.9070	0.8877		100.67
4.000	58.783	26.023	46.84	0.031149	3.9201	0.52404	32.104	0.25510	1.9083	0.8871		100.60
4.015	59.000	26.041	46.87	0.031133	3.9181	0.52377	32.121	0.25523	1.9092	0.8866		100.55
4.070	59.817	26.111	47.00	0.031072	3.9105	0.52275	32.183	0.25572	1.9129	0.8849		100.36
4.083	60.000	26.127	47.03	0.031059	3.9088	0.52253	32.197	0.25584	1.9138	0.8845		100.31
4.151	61.000	26.211	47.18	0.030985	3.8995	0.52129	32.274	0.25644	1.9183	0.8824		100.07
4.219	62.000	26.294	47.33	0.030912	3.8903	0.52005	32.350	0.25705	1.9229	0.8803		99.84
4.287	63.000	26.376	47.48	0.030838	3.8810	0.51882	32.427	0.25766	1.9275	0.8783		99.60
4.355	64.000	26.457	47.62	0.030765	3.8719	0.51759	32.504	0.25827	1.9320	0.8762		99.36
4.423	65.000	26.538	47.77	0.030693	3.8627	0.51637	32.581	0.25889	1.9366	0.8741		99.13
4.491	66.000	26.617	47.91	0.030620	3.8536	0.51515	32.658	0.25950	1.9412	0.8720		98.90
4.534	66.625	26.667	48.00	0.030575	3.8479	0.51438	32.707	0.25989	1.9441	0.8707		98.75
4.559	67.000	26.696	48.05	0.030548	3.8444	0.51393	32.736	0.26012	1.9458	0.8700		98.66
4.627	68.000	26.774	48.19	0.030475	3.8353	0.51271	32.814	0.26073	1.9504	0.8679		98.43
4.695	69.000	26.851	48.33	0.030403	3.8263	0.51150	32.891	0.26135	1.9550	0.8659		98.19
4.763	70.000	26.927	48.47	0.030331	3.8172	0.51028	32.969	0.26197	1.9597	0.8638		97.96
4.829	70.960	27.000	48.60	0.030262	3.8085	0.50912	33.045	0.26257	1.9642	0.8618		97.74
4.831	71.000	27.003	48.61	0.030259	3.8082	0.50908	33.048	0.26259	1.9643	0.8618		97.73
4.899	72.000	27.078	48.74	0.030187	3.7991	0.50787	33.126	0.26322	1.9690	0.8597		97.50
4.967	73.000	27.152	48.87	0.030116	3.7901	0.50666	33.205	0.26385	1.9737	0.8577		97.27
5.000	73.481	27.187	48.94	0.030081	3.7858	0.50608	33.243	0.26415	1.9760	0.8567		97.16
5.032	73.957	27.222	49.00	0.030047	3.7815	0.50551	33.281	0.26445	1.9782	0.8557		97.05
5.035	74.000	27.225	49.01	0.030044	3.7811	0.50546	33.284	0.26447	1.9784	0.8556		97.04
5.103	75.000	27.298	49.14	0.029973	3.7721	0.50426	33.364	0.26510	1.9831	0.8536		96.81
5.171	76.000	27.370	49.27	0.029901	3.7631	0.50306	33.443	0.26574	1.9879	0.8516		96.57
5.240	77.000	27.441	49.39	0.029830	3.7541	0.50186	33.523	0.26637	1.9926	0.8495		96.34
5.308	78.000	27.512	49.52	0.029759	3.7452	0.50066	33.604	0.26701	1.9974	0.8475		96.11
5.376	79.000	27.582	49.65	0.029688	3.7362	0.49946	33.684	0.26765	2.0022	0.8455		95.88
5.444	80.000	27.652	49.77	0.029616	3.7272	0.49826	33.765	0.26829	2.0070	0.8435		95.65
5.512	81.000	27.721	49.90	0.029545	3.7183	0.49706	33.846	0.26894	2.0118	0.8414		95.42
5.569	81.838	27.778	50.00	0.029486	3.7108	0.49606	33.915	0.26948	2.0159	0.8397		95.23
5.580	82.000	27.789	50.02	0.029474	3.7093	0.49587	33.928	0.26959	2.0167	0.8394		95.19
5.648	83.000	27.857	50.14	0.029403	3.7004	0.49467	34.010	0.27024	2.0216	0.8374		94.96
5.716	84.000	27.924	50.26	0.029332	3.6914	0.49347	34.093	0.27090	2.0265	0.8353		94.73
5.784	85.000	27.990	50.38	0.029261	3.6825	0.49228	34.176	0.27156	2.0314	0.8333		94.50
5.794	85.148	28.000	50.40	0.029250	3.6812	0.49210	34.188	0.27165	2.0321	0.8330		94.47
5.852	86.000	28.056	50.50	0.029190	3.6735	0.49108	34.259	0.27222	2.0363	0.8313		94.28
5.920	87.000	28.122	50.62	0.029118	3.6646	0.48988	34.343	0.27288	2.0413	0.8293		94.05
5.988	88.000	28.187	50.74	0.029047	3.6556	0.48868	34.427	0.27355	2.0463	0.8272		93.82

TABLE 15 CONTINUED

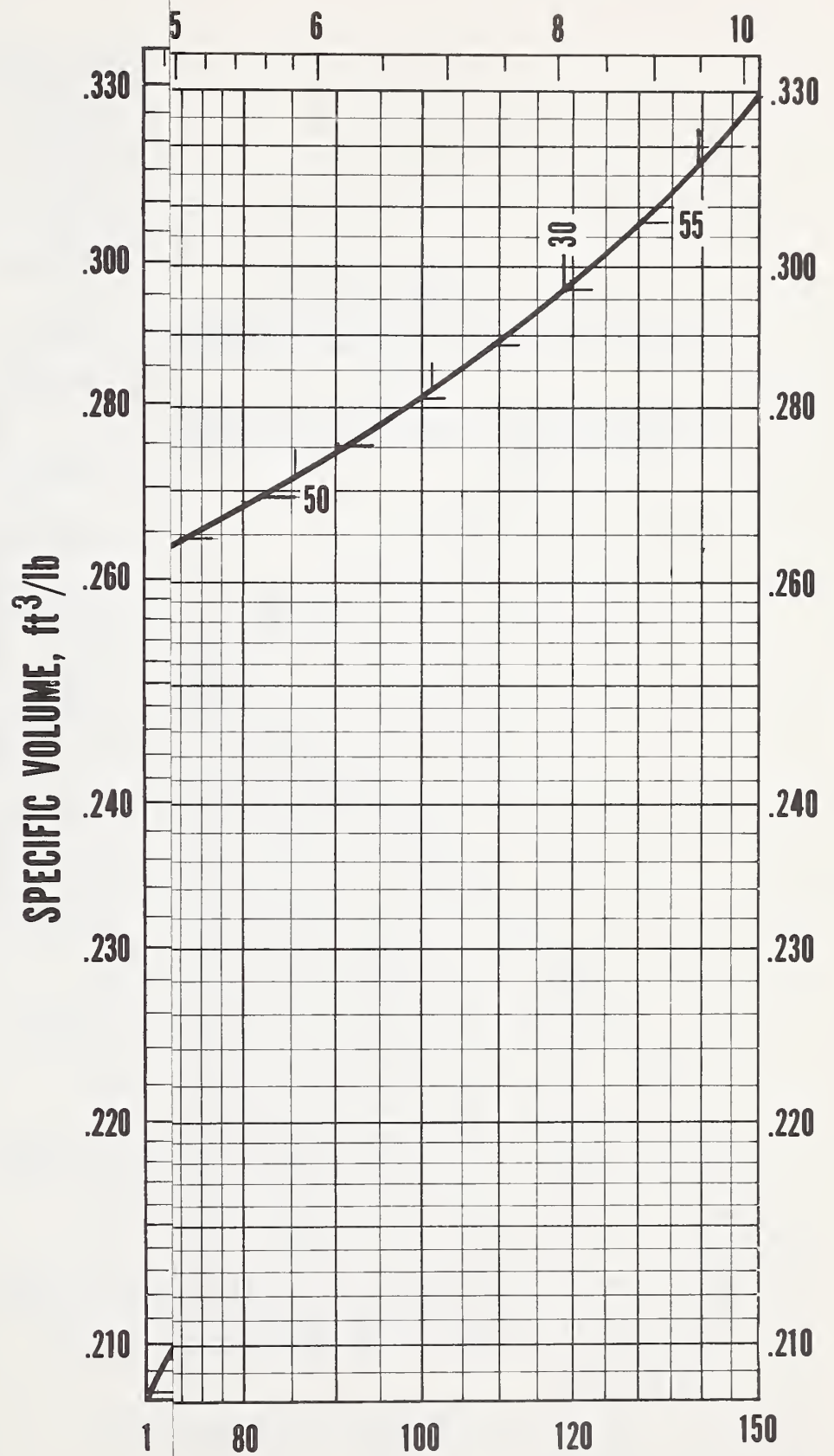
SATURATED LIQUID PARAHYDROGEN

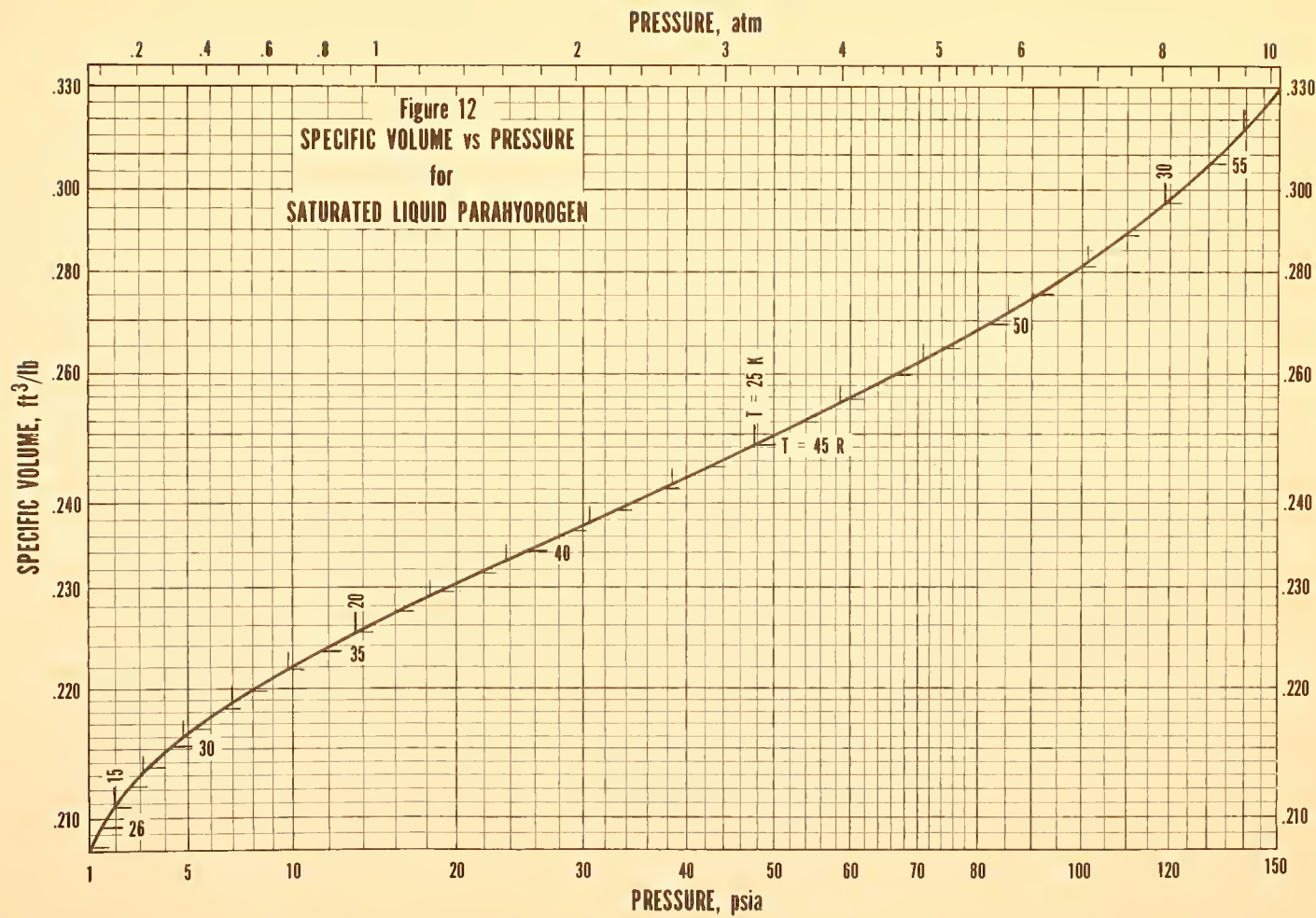
PRESSURE	TEMPERATURE	DENSITY	VOLUME	LIQ VOLUME CORRECTION FACTOR	DENSITY RATIO NTP (70°F) CORRECTION FACTOR	VOLUME FT ³ /LB	GAL/LB	GRAM-MOLE/ CM ³	LB/GAL	GRAM-MOLE/ CM ³	LB/GAL	DENSITY LB/FT ³	RANKINE	GRAM-MOLE/ CM ³	KELVIN	PSIA	ATM
6.000	28.198	50.76	0.029035	3.6540	0.48847	34.442	0.27367	2.0472	0.8269	93.77	2.0472	0.8269	93.77	0.029035	28.198	88.175	6.000
6.056	28.251	50.85	0.028976	3.6466	0.48748	34.511	0.27423	2.0513	0.8252	93.59	2.0513	0.8252	93.59	0.028976	28.251	89.000	6.056
6.124	28.315	50.97	0.028905	3.6377	0.48629	34.597	0.27490	2.0564	0.8232	93.35	2.0564	0.8232	93.35	0.028905	28.315	90.000	6.124
6.144	28.333	51.00	0.028884	3.6351	0.48594	34.621	0.27510	2.0579	0.8226	93.29	2.0579	0.8226	93.29	0.028884	28.333	90.287	6.144
6.192	28.379	51.08	0.028833	3.6287	0.48508	34.682	0.27558	2.0615	0.8211	93.12	2.0615	0.8211	93.12	0.028833	28.379	91.000	6.192
6.260	28.441	51.19	0.028762	3.6197	0.48388	34.768	0.27627	2.0666	0.8191	92.89	2.0666	0.8191	92.89	0.028762	28.441	92.000	6.260
6.328	28.504	51.31	0.028690	3.6107	0.48268	34.855	0.27696	2.0718	0.8171	92.66	2.0718	0.8171	92.66	0.028690	28.504	93.000	6.328
6.396	28.566	51.42	0.028619	3.6017	0.48148	34.942	0.27765	2.0770	0.8150	92.43	2.0770	0.8150	92.43	0.028619	28.566	94.000	6.396
6.464	28.627	51.53	0.028547	3.5927	0.48027	35.030	0.27835	2.0822	0.8130	92.20	2.0822	0.8130	92.20	0.028547	28.627	95.000	6.464
6.532	28.689	51.64	0.028475	3.5836	0.47906	35.118	0.27905	2.0874	0.8110	91.97	2.0874	0.8110	91.97	0.028475	28.689	96.000	6.532
6.600	28.749	51.75	0.028403	3.5746	0.47785	35.207	0.27975	2.0927	0.8089	91.74	2.0927	0.8089	91.74	0.028403	28.749	97.000	6.600
6.668	28.809	51.86	0.028331	3.5655	0.47664	35.297	0.28046	2.0980	0.8069	91.50	2.0980	0.8069	91.50	0.028331	28.809	98.000	6.668
6.737	28.869	51.96	0.028259	3.5564	0.47543	35.387	0.28118	2.1034	0.8048	91.27	2.1034	0.8048	91.27	0.028259	28.869	99.000	6.737
6.759	28.889	52.00	0.028235	3.5534	0.47503	35.417	0.28142	2.1052	0.8041	91.19	2.1052	0.8041	91.19	0.028235	28.889	99.329	6.759
6.805	28.929	52.07	0.028187	3.5473	0.47421	35.478	0.28190	2.1088	0.8027	91.04	2.1088	0.8027	91.04	0.028187	28.929	100.000	6.805
6.873	28.988	52.18	0.028114	3.5382	0.47299	35.569	0.28263	2.1142	0.8007	90.80	2.1142	0.8007	90.80	0.028114	28.988	101.000	6.873
6.887	29.000	52.20	0.028099	3.5363	0.47273	35.588	0.28278	2.1154	0.8002	90.75	2.1154	0.8002	90.75	0.028099	29.000	101.210	6.887
6.941	29.046	52.28	0.028042	3.5291	0.47177	35.661	0.28336	2.1197	0.7986	90.57	2.1197	0.7986	90.57	0.028042	29.046	102.000	6.941
7.000	29.097	52.37	0.027978	3.5211	0.47070	35.742	0.28400	2.1245	0.7968	90.36	2.1245	0.7968	90.36	0.027978	29.097	102.871	7.000
7.009	29.104	52.39	0.027969	3.5199	0.47054	35.754	0.28410	2.1252	0.7965	90.33	2.1252	0.7965	90.33	0.027969	29.104	103.000	7.009
7.145	29.162	52.49	0.027896	3.5107	0.46932	35.847	0.28484	2.1308	0.7945	90.10	2.1308	0.7945	90.10	0.027896	29.162	104.000	7.145
7.213	29.220	52.60	0.027823	3.5015	0.46809	35.942	0.28559	2.1364	0.7924	89.86	2.1364	0.7924	89.86	0.027823	29.220	105.000	7.213
7.281	29.277	52.70	0.027750	3.4923	0.46685	36.037	0.28634	2.1420	0.7903	89.62	2.1420	0.7903	89.62	0.027750	29.277	106.000	7.281
7.349	29.333	52.80	0.027676	3.4831	0.46562	36.132	0.28710	2.1477	0.7882	89.39	2.1477	0.7882	89.39	0.027676	29.333	107.000	7.349
7.399	29.389	52.90	0.027602	3.4738	0.46438	36.229	0.28787	2.1534	0.7861	89.15	2.1534	0.7861	89.15	0.027602	29.389	108.000	7.399
7.416	29.444	53.00	0.027528	3.4646	0.46315	36.325	0.28863	2.1591	0.7840	88.91	2.1591	0.7840	88.91	0.027528	29.444	108.986	7.416
7.417	29.445	53.00	0.027528	3.4645	0.46313	36.326	0.28864	2.1592	0.7840	88.91	2.1592	0.7840	88.91	0.027528	29.445	109.000	7.417
7.485	29.501	53.10	0.027454	3.4551	0.46188	36.424	0.28942	2.1650	0.7819	88.67	2.1650	0.7819	88.67	0.027454	29.501	110.000	7.485
7.553	29.556	53.20	0.027380	3.4458	0.46063	36.523	0.29021	2.1709	0.7798	88.43	2.1709	0.7798	88.43	0.027380	29.556	111.000	7.553
7.621	29.611	53.30	0.027305	3.4364	0.45938	36.623	0.29100	2.1769	0.7776	88.19	2.1769	0.7776	88.19	0.027305	29.611	112.000	7.621
7.689	29.665	53.40	0.027230	3.4270	0.45812	36.724	0.29180	2.1828	0.7755	87.95	2.1828	0.7755	87.95	0.027230	29.665	113.000	7.689
7.757	29.719	53.49	0.027155	3.4175	0.45685	36.826	0.29261	2.1889	0.7734	87.70	2.1889	0.7734	87.70	0.027155	29.719	114.000	7.757
7.825	29.773	53.59	0.027080	3.4080	0.45558	36.928	0.29343	2.1950	0.7712	87.46	2.1950	0.7712	87.46	0.027080	29.773	115.000	7.825
7.893	29.826	53.69	0.027004	3.3985	0.45431	37.032	0.29425	2.2011	0.7690	87.22	2.2011	0.7690	87.22	0.027004	29.826	116.000	7.893
7.961	29.879	53.78	0.026928	3.3889	0.45303	37.136	0.29508	2.2074	0.7669	86.97	2.2074	0.7669	86.97	0.026928	29.879	117.000	7.961
8.000	29.909	53.84	0.026885	3.3834	0.45230	37.196	0.29556	2.2109	0.7657	86.83	2.2109	0.7657	86.83	0.026885	29.909	117.568	8.000
8.029	29.932	53.88	0.026851	3.3793	0.45174	37.242	0.29592	2.2136	0.7647	86.72	2.2136	0.7647	86.72	0.026851	29.932	118.000	8.029
8.097	29.984	53.97	0.026775	3.3696	0.45045	37.349	0.29677	2.2200	0.7625	86.48	2.2200	0.7625	86.48	0.026775	29.984	119.000	8.097
8.118	30.000	54.00	0.026752	3.3668	0.45007	37.380	0.29762	2.2219	0.7619	86.40	2.2219	0.7619	86.40	0.026752	30.000	119.297	8.118
8.165	30.037	54.07	0.026698	3.3599	0.44916	37.456	0.29849	2.2264	0.7603	86.23	2.2264	0.7603	86.23	0.026698	30.037	120.000	8.165
8.234	30.088	54.16	0.026620	3.3502	0.44786	37.565	0.29936	2.2329	0.7581	85.98	2.2329	0.7581	85.98	0.026620	30.088	121.000	8.234
8.254	30.140	54.25	0.026543	3.3404	0.44655	37.675	0.29936	2.2394	0.7559	85.73	2.2394	0.7559	85.73	0.026543	30.140	122.000	8.254
8.370	30.191	54.34	0.026465	3.3306	0.44524	37.786	0.30025	2.2460	0.7537	85.47	2.2460	0.7537	85.47	0.026465	30.191	123.000	8.370
8.438	30.242	54.44	0.026386	3.3207	0.44391	37.899	0.30114	2.2527	0.7515	85.22	2.2527	0.7515	85.22	0.026386	30.242	124.000	8.438
8.506	30.292	54.53	0.026307	3.3108	0.44259	38.013	0.30204	2.2594	0.7492	84.97	2.2594	0.7492	84.97	0.026307	30.292	125.000	8.506

TABLE 15 CONTINUED

SATURATED LIQUID PARAHYDROGEN

PRESSURE		TEMPERATURE		DENSITY GRAM-MOLE/ CM ³	LB/FT ³	VOLUME CM ³ / GRAM-MOLE	FT ³ /LB	GAL/LB	LIQ VOLUME CORRECTION FACTOR	DENSITY RATIO	
ATM	PSIA	KELVIN	RANKINE							NTP (70 °F)	VOLUME* CORRECTION FACTOR FT ³ /GAL
8.574	126.000	30.343	54.62	0.026228	3.3008	0.44125	0.30296	2.2663	0.7469	84.71	
8.642	127.000	30.393	54.71	0.026148	3.2908	0.43991	0.30388	2.2732	0.7447	84.45	
8.710	128.000	30.442	54.80	0.026068	3.2806	0.43856	0.30482	2.2802	0.7424	84.19	
8.778	129.000	30.492	54.89	0.025987	3.2705	0.43720	0.30576	2.2873	0.7401	83.93	
8.846	130.000	30.541	54.97	0.025906	3.2603	0.43583	0.30672	2.2945	0.7378	83.67	
8.866	130.300	30.556	55.00	0.025881	3.2572	0.43542	0.30701	2.2966	0.7371	83.59	
8.914	131.000	30.590	55.06	0.025824	3.2500	0.43446	0.30769	2.3017	0.7354	83.41	
8.982	132.000	30.638	55.15	0.025742	3.2396	0.43307	0.30868	2.3091	0.7331	83.14	
9.000	132.263	30.651	55.17	0.025720	3.2369	0.43271	0.30880	2.3110	0.7325	83.07	
9.050	133.000	30.687	55.24	0.025659	3.2292	0.43168	0.30967	2.3165	0.7307	82.87	
9.118	134.000	30.735	55.32	0.025576	3.2187	0.43028	0.31068	2.3241	0.7284	82.60	
9.186	135.000	30.783	55.41	0.025491	3.2081	0.42886	0.31171	2.3317	0.7260	82.33	
9.254	136.000	30.830	55.49	0.025407	3.1975	0.42744	0.31275	2.3395	0.7236	82.06	
9.322	137.000	30.877	55.58	0.025322	3.1867	0.42600	0.31380	2.3474	0.7211	81.78	
9.390	138.000	30.924	55.66	0.025236	3.1759	0.42456	0.31487	2.3554	0.7187	81.50	
9.458	139.000	30.971	55.75	0.025149	3.1650	0.42310	0.31596	2.3635	0.7162	81.22	
9.501	139.621	31.000	55.80	0.025095	3.1582	0.42219	0.31664	2.3686	0.7147	81.05	
9.526	140.000	31.018	55.83	0.025061	3.1540	0.42163	0.31706	2.3718	0.7137	80.94	
9.594	141.000	31.064	55.91	0.024973	3.1429	0.42015	0.31818	2.3801	0.7112	80.66	
9.662	142.000	31.110	56.00	0.024884	3.1317	0.41865	0.31931	2.3886	0.7087	80.37	
9.664	142.027	31.111	56.00	0.024882	3.1314	0.41861	0.31935	2.3889	0.7086	80.36	
9.731	143.000	31.156	56.08	0.024794	3.1204	0.41714	0.32047	2.3973	0.7061	80.08	
9.799	144.000	31.201	56.16	0.024704	3.1090	0.41561	0.32165	2.4061	0.7035	79.79	
9.867	145.000	31.247	56.24	0.024612	3.0975	0.41407	0.32285	2.4151	0.7009	79.49	
9.935	146.000	31.292	56.32	0.024520	3.0858	0.41251	0.32406	2.4242	0.6983	79.19	
10.000	146.961	31.335	56.40	0.024430	3.0745	0.41100	0.32526	2.4331	0.6957	78.90	
10.003	147.000	31.336	56.41	0.024426	3.0740	0.41094	0.32531	2.4335	0.6956	78.89	
10.071	148.000	31.381	56.49	0.024331	3.0621	0.40935	0.32657	2.4429	0.6929	78.58	
10.139	149.000	31.425	56.57	0.024236	3.0501	0.40774	0.32786	2.4526	0.6902	78.28	
10.207	150.000	31.470	56.65	0.024139	3.0379	0.40611	0.32917	2.4624	0.6875	77.96	
10.515	154.522	31.667	57.00	0.023685	2.9808	0.39848	0.33548	2.5096	0.6745	76.50	
11.000	161.657	31.969	57.54	0.022903	2.8824	0.38532	0.34694	2.5953	0.6523	73.97	
11.051	162.411	32.000	57.60	0.022814	2.8712	0.38383	0.34828	2.6053	0.6497	73.69	
11.421	167.847	32.222	58.00	0.022130	2.7851	0.37231	0.35906	2.6859	0.6302	71.47	
12.000	176.353	32.558	58.60	0.020809	2.6189	0.35009	0.38185	2.8564	0.5926	67.21	
12.394	182.137	32.778	59.00	0.019520	2.4567	0.32841	0.40706	3.0450	0.5559	63.05	
12.759	187.510	32.976	59.36	0.015590	1.9620	0.26228	0.50968	3.8127	0.4440	50.35	





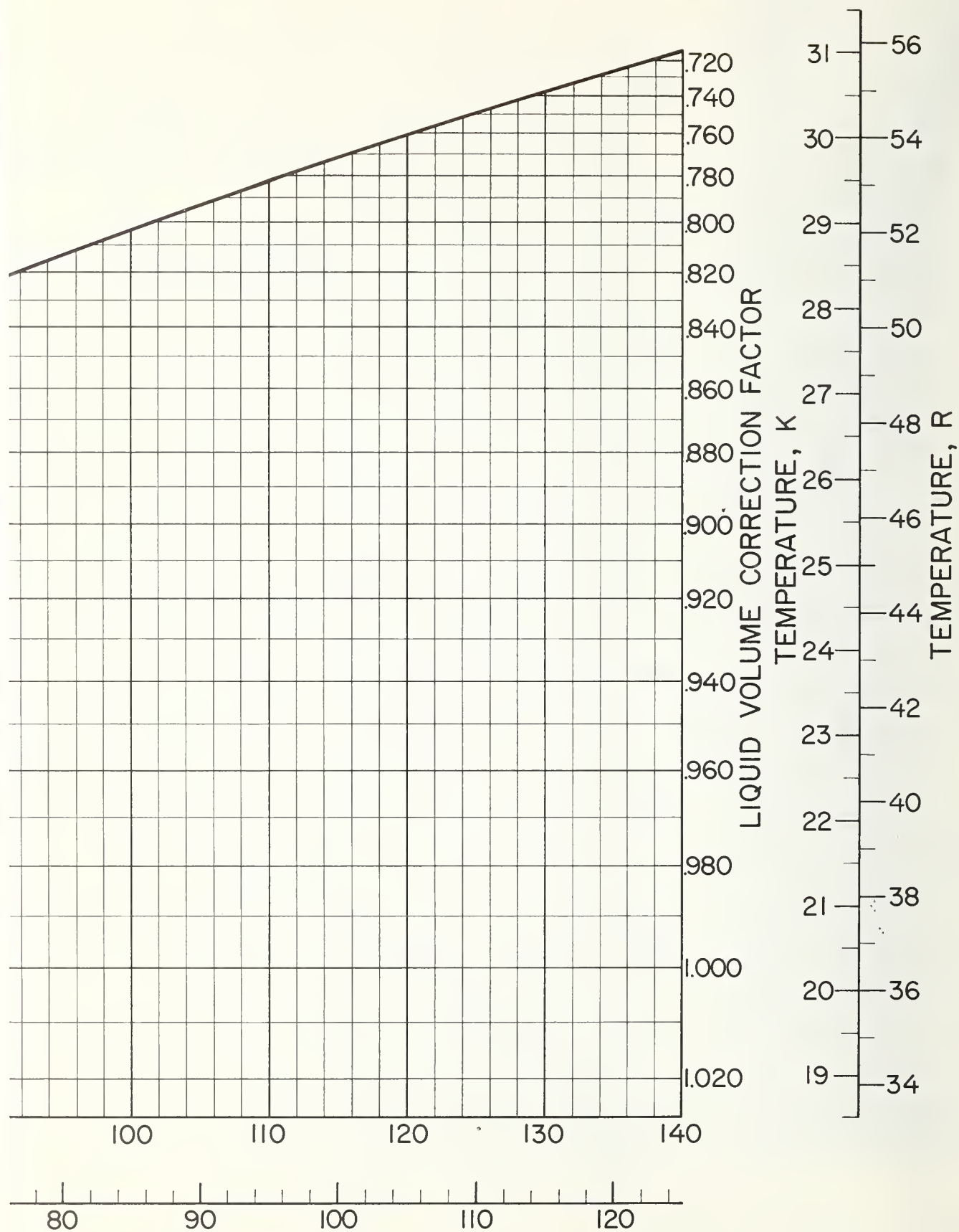
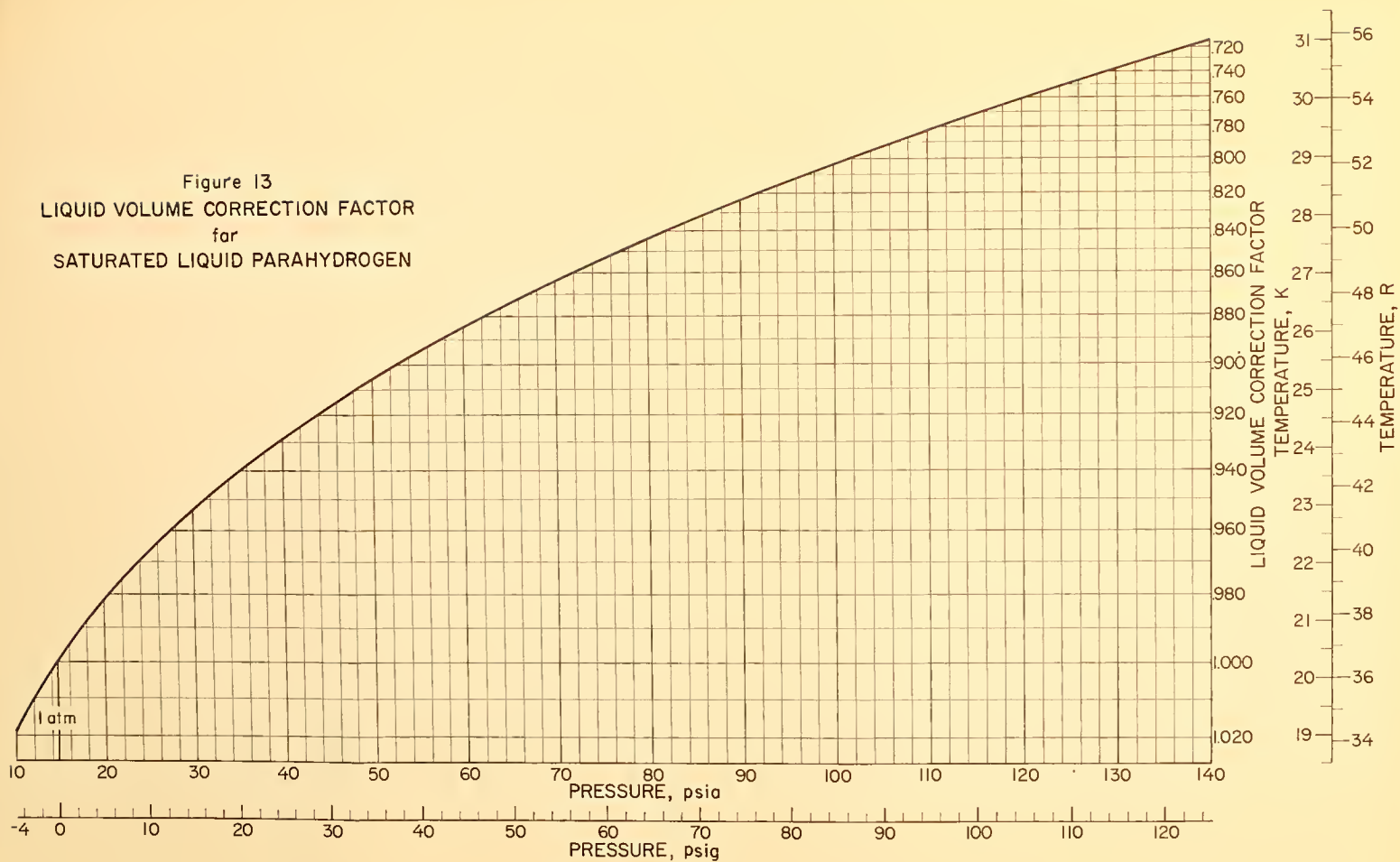


TABLE 16

DENSITY OF COMPRESSED LIQUID HYDROGEN

1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA				TABLE ENTRIES 1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL							
PSIA ATM.	12.000 0.817	14.696 1.000	20.000 1.361	40.000 2.722	60.000 4.083	80.000 5.444	100.000 6.805	120.000 8.165	140.000 9.526	160.000 10.887	180.000 12.248
19.5 35.10 11.618	1.0120 114.77 0.5978	1.0124 114.81 0.5981	1.0131 114.89 0.5985	1.0156 115.18 0.5999	1.0181 115.46 0.6014	1.0205 115.73 0.6029	1.0229 116.01 0.6043	1.0253 116.27 0.6057	1.0276 116.53 0.6070	1.0299 116.79 0.6084	1.0321 117.05 0.6097
19.6 35.28 11.990	1.0105 114.59 0.5969	1.0108 114.63 0.5971	1.0115 114.71 0.5975	1.0140 115.00 0.5990	1.0165 115.28 0.6005	1.0190 115.56 0.6020	1.0214 115.84 0.6034	1.0238 116.11 0.6048	1.0261 116.37 0.6062	1.0284 116.63 0.6075	1.0307 116.89 0.6089
19.7 35.46 12.370		1.0092 114.45 0.5962	1.0099 114.53 0.5966	1.0125 114.82 0.5981	1.0150 115.11 0.5996	1.0175 115.39 0.6011	1.0199 115.67 0.6025	1.0223 115.94 0.6039	1.0247 116.20 0.6053	1.0270 116.47 0.6067	1.0292 116.72 0.6080
19.8 35.64 12.758		1.0076 114.27 0.5953	1.0083 114.35 0.5957	1.0109 114.65 0.5972	1.0135 114.93 0.5987	1.0160 115.22 0.6002	1.0184 115.50 0.6016	1.0208 115.77 0.6030	1.0232 116.04 0.6044	1.0255 116.30 0.6058	1.0278 116.56 0.6072
19.9 35.82 13.155		1.0060 114.09 0.5943	1.0067 114.17 0.5947	1.0093 114.47 0.5963	1.0119 114.76 0.5978	1.0144 115.04 0.5993	1.0169 115.32 0.6007	1.0193 115.60 0.6022	1.0217 115.87 0.6036	1.0241 116.14 0.6050	1.0264 116.40 0.6063
20.0 36.00 13.561		1.0044 113.91 0.5934	1.0051 113.99 0.5938	1.0078 114.29 0.5953	1.0103 114.58 0.5968	1.0129 114.87 0.5984	1.0154 115.15 0.5998	1.0178 115.43 0.6013	1.0202 115.70 0.6027	1.0226 115.97 0.6041	1.0249 116.23 0.6055
20.1 36.18 13.976		1.0028 113.73 0.5924	1.0035 113.81 0.5928	1.0062 114.11 0.5944	1.0088 114.40 0.5959	1.0113 114.69 0.5974	1.0138 114.98 0.5989	1.0163 115.26 0.6004	1.0187 115.53 0.6018	1.0211 115.80 0.6032	1.0235 116.07 0.6046
20.2 36.36 14.411		1.0012 113.54 0.5914	1.0019 113.62 0.5919	1.0046 113.92 0.5934	1.0072 114.22 0.5950	1.0098 114.51 0.5965	1.0123 114.80 0.5980	1.0148 115.08 0.5995	1.0172 115.36 0.6009	1.0196 115.63 0.6023	1.0220 115.90 0.6037
20.3 36.54 14.834			1.0002 113.43 0.5909	1.0029 113.74 0.5925	1.0056 114.04 0.5940	1.0082 114.34 0.5956	1.0107 114.63 0.5971	1.0133 114.91 0.5986	1.0157 115.19 0.6000	1.0181 115.47 0.6015	1.0205 115.74 0.6029
20.4 36.72 15.276			0.9986 113.25 0.5899	1.0013 113.56 0.5915	1.0040 113.86 0.5931	1.0066 114.16 0.5946	1.0092 114.45 0.5962	1.0117 114.74 0.5977	1.0142 115.02 0.5991	1.0166 115.30 0.6006	1.0190 115.57 0.6020
20.5 36.90 15.729			0.9969 113.06 0.5889	0.9997 113.37 0.5905	1.0024 113.68 0.5921	1.0050 113.98 0.5937	1.0076 114.27 0.5952	1.0102 114.56 0.5967	1.0127 114.84 0.5982	1.0151 115.12 0.5997	1.0176 115.40 0.6011
20.6 37.08 16.190			0.9952 112.86 0.5879	0.9980 113.18 0.5896	1.0007 113.49 0.5912	1.0034 113.79 0.5928	1.0060 114.09 0.5943	1.0086 114.38 0.5958	1.0111 114.67 0.5973	1.0136 114.95 0.5988	1.0161 115.23 0.6002
20.7 37.26 16.661			0.9935 112.67 0.5869	0.9963 112.99 0.5886	0.9991 113.30 0.5902	1.0018 113.61 0.5918	1.0044 113.91 0.5934	1.0070 114.20 0.5949	1.0096 114.49 0.5964	1.0121 114.78 0.5979	1.0145 115.06 0.5993
20.8 37.44 17.142			0.9918 112.48 0.5859	0.9946 112.80 0.5876	0.9974 113.12 0.5892	1.0002 113.43 0.5908	1.0028 113.73 0.5924	1.0055 114.03 0.5940	1.0080 114.32 0.5955	1.0105 114.60 0.5970	1.0130 114.89 0.5984
20.9 37.62 17.633			0.9901 112.28 0.5849	0.9929 112.61 0.5866	0.9958 112.93 0.5882	0.9985 113.24 0.5899	1.0012 113.55 0.5915	1.0039 113.85 0.5930	1.0065 114.14 0.5946	1.0090 114.43 0.5961	1.0115 114.71 0.5975
21.0 37.80 18.127			0.9883 112.08 0.5838	0.9912 112.41 0.5856	0.9941 112.74 0.5872	0.9969 113.05 0.5889	0.9996 113.36 0.5905	1.0023 113.66 0.5921	1.0049 113.96 0.5936	1.0074 114.25 0.5951	1.0100 114.54 0.5966
21.1 37.98 18.637			0.9866 111.88 0.5828	0.9895 112.22 0.5845	0.9924 112.54 0.5862	0.9952 112.86 0.5879	0.9979 113.17 0.5895	1.0006 113.48 0.5911	1.0033 113.78 0.5927	1.0059 114.07 0.5942	1.0084 114.36 0.5957
21.2 38.16 19.157			0.9848 111.68 0.5818	0.9878 112.02 0.5835	0.9907 112.35 0.5852	0.9935 112.67 0.5869	0.9963 112.98 0.5886	0.9990 113.30 0.5902	1.0017 113.60 0.5917	1.0043 113.89 0.5933	1.0069 114.19 0.5948
21.3 38.34 19.687			0.9830 111.48 0.5807	0.9860 111.82 0.5825	0.9890 112.16 0.5842	0.9918 112.48 0.5859	0.9946 112.80 0.5876	0.9974 113.11 0.5892	1.0001 113.42 0.5908	1.0027 113.71 0.5923	1.0053 114.01 0.5939
21.4 38.52 20.228				0.9843 111.62 0.5815	0.9872 111.96 0.5832	0.9901 112.29 0.5849	0.9930 112.61 0.5866	0.9957 112.92 0.5882	0.9984 113.23 0.5898	1.0011 113.53 0.5914	1.0037 113.83 0.5929

Figure 13
LIQUID VOLUME CORRECTION FACTOR
for
SATURATED LIQUID PARAHYDROGEN



21.4	0.9843	0.9872	0.9901	0.9930	0.9957	0.9984	1.0011	1.0037
38.52	111.62	111.96	112.29	112.61	112.92	113.23	113.53	113.83
21.228	0.5815	0.5832	0.5849	0.5866	0.5882	0.5898	0.5914	0.5929

TABLE 16 - CONTINUED

DENSITY OF COMPRESSED LIQUID HYDROGEN - CONTINUED

TABLE ENTRIES												
1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA				1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL								
PSIA	12.000	14.696	20.000	40.000	60.000	80.000	100.000	120.000	140.000	160.000	180.000	
ATM.	0.817	1.000	1.361	2.722	4.083	5.444	6.805	8.165	9.526	10.887	12.248	
21.5 38.70 23.790				0.9825 111.42 0.5814	0.9855 111.76 0.5822	0.9884 112.09 0.5839	0.9913 112.42 0.5856	0.9941 112.74 0.5872	0.9968 113.05 0.5889	0.9995 113.35 0.5904	1.0021 113.65 0.5920	
21.6 38.88 24.342				0.9817 111.22 0.5794	0.9837 111.56 0.5811	0.9867 111.90 0.5829	0.9896 112.23 0.5846	0.9924 112.55 0.5863	0.9952 112.86 0.5879	0.9979 113.17 0.5895	1.0005 113.47 0.5911	
21.7 39.16 24.915				0.9789 111.02 0.5783	0.9820 111.36 0.5801	0.9850 111.70 0.5819	0.9879 112.03 0.5836	0.9907 112.36 0.5853	0.9935 112.67 0.5869	0.9963 112.98 0.5885	0.9989 113.29 0.5901	
21.8 39.24 25.510				0.9771 110.81 0.5772	0.9802 111.16 0.5790	0.9832 111.50 0.5808	0.9862 111.84 0.5826	0.9890 112.17 0.5843	0.9919 112.48 0.5859	0.9946 112.80 0.5876	0.9973 113.10 0.5892	
21.9 39.42 26.095				0.9753 110.61 0.5761	0.9784 110.96 0.5780	0.9815 111.30 0.5798	0.9844 111.64 0.5815	0.9873 111.97 0.5833	0.9902 112.29 0.5849	0.9930 112.61 0.5866	0.9957 112.92 0.5882	
22.0 39.60 26.701				0.9735 110.40 0.5751	0.9766 110.76 0.5769	0.9797 111.10 0.5787	0.9827 111.45 0.5805	0.9856 111.78 0.5823	0.9885 112.10 0.5839	0.9913 112.42 0.5856	0.9941 112.73 0.5872	
22.1 39.78 27.319				0.9716 110.19 0.5740	0.9748 110.55 0.5758	0.9779 110.90 0.5777	0.9809 111.24 0.5795	0.9839 111.58 0.5812	0.9868 111.91 0.5829	0.9896 112.23 0.5846	0.9924 112.55 0.5863	
22.2 39.96 27.948				0.9697 109.98 0.5729	0.9730 110.34 0.5748	0.9761 110.70 0.5766	0.9792 111.04 0.5784	0.9822 111.38 0.5802	0.9851 111.72 0.5819	0.9880 112.04 0.5836	0.9908 112.36 0.5853	
22.3 40.14 28.589				0.9678 109.76 0.5717	0.9711 110.13 0.5737	0.9743 110.49 0.5755	0.9774 110.84 0.5774	0.9804 111.19 0.5792	0.9834 111.52 0.5809	0.9863 111.85 0.5826	0.9891 112.17 0.5843	
22.4 40.32 29.241				0.9659 109.54 0.5716	0.9692 109.92 0.5726	0.9725 110.28 0.5745	0.9756 110.64 0.5763	0.9786 110.99 0.5781	0.9816 111.32 0.5799	0.9846 111.66 0.5816	0.9874 111.98 0.5833	
22.5 40.50 29.935				0.9640 109.32 0.5695	0.9673 109.70 0.5714	0.9706 110.07 0.5734	0.9738 110.43 0.5752	0.9769 110.78 0.5771	0.9799 111.13 0.5789	0.9828 111.46 0.5806	0.9857 111.79 0.5823	
22.6 40.68 30.681				0.9620 109.10 0.5683	0.9654 109.49 0.5703	0.9687 109.86 0.5723	0.9720 110.23 0.5742	0.9751 110.58 0.5760	0.9781 110.93 0.5778	0.9811 111.26 0.5796	0.9840 111.60 0.5813	
22.7 40.86 31.470				0.9601 108.88 0.5672	0.9635 109.27 0.5692	0.9669 109.65 0.5712	0.9701 110.02 0.5731	0.9733 110.38 0.5750	0.9764 110.73 0.5768	0.9794 111.07 0.5785	0.9823 111.40 0.5803	
22.8 41.04 32.270				0.9581 108.65 0.5660	0.9616 109.05 0.5680	0.9650 109.43 0.5700	0.9682 109.81 0.5720	0.9715 110.17 0.5739	0.9746 110.52 0.5757	0.9776 110.87 0.5775	0.9806 111.21 0.5793	
22.9 41.22 33.082				0.9561 108.43 0.5648	0.9596 108.83 0.5669	0.9630 109.22 0.5689	0.9664 109.59 0.5709	0.9696 109.96 0.5728	0.9728 110.32 0.5747	0.9758 110.67 0.5765	0.9788 111.01 0.5782	
23.0 41.40 33.937				0.9541 108.20 0.5636	0.9576 108.60 0.5657	0.9611 109.00 0.5679	0.9645 109.38 0.5698	0.9678 109.75 0.5717	0.9710 110.11 0.5736	0.9741 110.47 0.5754	0.9771 110.81 0.5772	
23.1 41.58 34.815				0.9521 107.97 0.5624	0.9557 108.38 0.5645	0.9592 108.78 0.5666	0.9626 109.16 0.5686	0.9659 109.54 0.5706	0.9691 109.91 0.5725	0.9723 110.26 0.5744	0.9753 110.61 0.5762	
23.2 41.76 35.735				0.9500 107.74 0.5612	0.9537 108.15 0.5634	0.9572 108.55 0.5655	0.9607 108.95 0.5675	0.9640 109.33 0.5695	0.9673 109.70 0.5714	0.9705 110.06 0.5733	0.9736 110.41 0.5751	
23.3 41.94 36.688				0.9479 107.50 0.5600	0.9516 107.92 0.5622	0.9552 108.33 0.5643	0.9587 108.73 0.5664	0.9621 109.11 0.5684	0.9654 109.49 0.5703	0.9686 109.85 0.5722	0.9718 110.21 0.5741	
23.4 42.12 37.633				0.9458 107.26 0.5587	0.9496 107.69 0.5610	0.9532 108.10 0.5631	0.9568 108.50 0.5652	0.9602 108.89 0.5672	0.9635 109.27 0.5692	0.9668 109.64 0.5711	0.9700 110.00 0.5730	

TABLE ENTRIES												
1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA				1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL								
PSIA	12.000	14.696	20.000	40.000	60.000	80.000	100.000	120.000	140.000	160.000	180.000	
ATM.	0.817	1.000	1.361	2.722	4.083	5.444	6.805	8.165	9.526	10.887	12.248	
23.5 42.30 34.222				0.9437 107.02 0.5575	0.9475 107.46 0.5597	0.9512 107.88 0.5619	0.9548 108.28 0.5640	0.9583 108.68 0.5661	0.9617 109.06 0.5681	0.9649 109.43 0.5700	0.9681 109.79 0.5719	
23.6 42.48 35.024				0.9416 106.78 0.5562	0.9454 107.22 0.5585	0.9492 107.65 0.5607	0.9528 108.06 0.5629	0.9563 108.46 0.5649	0.9598 108.84 0.5670	0.9631 109.22 0.5689	0.9663 109.59 0.5708	
23.7 42.66 35.839				0.9394 106.54 0.5550	0.9433 106.98 0.5573	0.9471 107.41 0.5595	0.9508 107.83 0.5617	0.9544 108.23 0.5638	0.9578 108.63 0.5658	0.9612 109.01 0.5678	0.9645 109.38 0.5698	
23.8 42.84 36.667				0.9372 106.29 0.5537	0.9412 106.74 0.5560	0.9451 107.19 0.5583	0.9488 107.60 0.5605	0.9524 108.01 0.5626	0.9559 108.41 0.5647	0.9593 108.79 0.5667	0.9626 109.17 0.5687	
23.9 43.02 37.519				0.9350 106.04 0.5524	0.9381 106.50 0.5547	0.9430 106.94 0.5571	0.9468 107.37 0.5593	0.9504 107.78 0.5614	0.9540 108.19 0.5635	0.9574 108.58 0.5656	0.9607 108.96 0.5676	
24.0 43.20 38.364				0.9328 105.79 0.5511	0.9369 106.25 0.5535	0.9409 106.70 0.5558	0.9447 107.14 0.5581	0.9484 107.56 0.5603	0.9520 107.96 0.5624	0.9555 108.36 0.5644	0.9589 108.74 0.5664	
24.1 43.38 39.233				0.9306 105.53 0.5497	0.9347 106.01 0.5522	0.9387 106.46 0.5545	0.9426 106.90 0.5568	0.9464 107.33 0.5591	0.9500 107.74 0.5612	0.9535 108.14 0.5633	0.9570 108.53 0.5653	
24.2 43.56 40.116					0.9325 105.75 0.5509	0.9366 106.22 0.5533	0.9405 106.66 0.5556	0.9443 107.09 0.5579	0.9480 107.51 0.5600	0.9516 107.92 0.5621	0.9550 108.31 0.5642	
24.3 43.74 41.013					0.9303 105.50 0.5496	0.9344 105.97 0.5520	0.9384 106.42 0.5543	0.9423 106.86 0.5566	0.9460 107.28 0.5588	0.9496 107.69 0.5610	0.9531 108.09 0.5630	
24.4 43.92 41.924					0.9280 105.25 0.5482	0.9322 105.72 0.5507	0.9363 106.18 0.5531	0.9402 106.62 0.5554	0.9440 107.05 0.5576	0.9476 107.47 0.5598	0.9512 107.87 0.5619	
24.5 44.10 42.850					0.9258 104.99 0.5469	0.9300 105.47 0.5494	0.9341 105.93 0.5518	0.9381 106.39 0.5541	0.9419 106.82 0.5564	0.9456 107.24 0.5586	0.9492 107.65 0.5607	
24.6 44.28 43.789					0.9234 104.72 0.5455	0.9278 105.22 0.5481	0.9319 105.69 0.5505	0.9359 106.14 0.5529	0.9398 106.58 0.5552	0.9436 107.01 0.5574	0.9472 107.42 0.5596	
24.7 44.46 44.743					0.9211 104.46 0.5441	0.9255 104.96 0.5467	0.9297 105.44 0.5492	0.9338 105.90 0.5516	0.9377 106.35 0.5540	0.9416 106.78 0.5562	0.9452 107.20 0.5584	
24.8 44.64 45.712					0.9187 104.19 0.5427	0.9232 104.70 0.5454	0.9275 105.19 0.5479	0.9316 105.65 0.5504	0.9356 106.11 0.5527	0.9395 106.54 0.5550	0.9432 106.97 0.5572	
24.9 44.82 46.695					0.9164 103.92 0.5413	0.9209 104.43 0.5440	0.9252 104.93 0.5466	0.9295 105.41 0.5491	0.9335 105.87 0.5515	0.9374 106.31 0.5538	0.9412 106.74 0.5560	
25.0 45.00 47.693						0.9139 103.65 0.5399	0.9185 104.17 0.5426	0.9230 104.67 0.5452	0.9273 105.16 0.5478	0.9314 105.62 0.5502	0.9353 106.07 0.5525	0.9391 106.50 0.5548
25.1 45.18 48.706						0.9115 103.37 0.5385	0.9162 103.90 0.5412	0.9207 104.41 0.5439	0.9250 104.90 0.5464	0.9292 105.38 0.5489	0.9332 105.83 0.5513	0.9371 106.27 0.5536
25.2 45.36 49.735						0.9090 103.09 0.5370	0.9138 103.63 0.5398	0.9184 104.15 0.5425	0.9227 104.65 0.5451	0.9270 105.13 0.5476	0.9311 105.59 0.5500	0.9350 106.04 0.5523
25.3 45.54 50.778						0.9065 102.81 0.5355	0.9114 103.36 0.5384	0.9160 103.88 0.5411	0.9205 104.39 0.5438	0.9247 104.87 0.5463	0.9289 105.35 0.5487	0.9329 105.80 0.5511
25.4 45.72 51.817						0.9040 102.52 0.5340	0.9089 103.08 0.5369	0.9137 103.62 0.5397	0.9182 104.13 0.5424	0.9225 104.62 0.5450	0.9267 105.10 0.5475	0.9308 105.56 0.5498

1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA			TABLE ENTRIES									
			1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL									
PSIA	12.000	14.696	20.000	40.000	60.000	80.000	100.000	120.000	140.000	160.000	180.000	
ATM.	0.817	1.000	1.361	2.722	4.083	5.444	6.805	8.165	9.526	10.887	12.248	
25.5 45.90 52.911					0.9014 102.23 0.5325	0.9064 102.80 0.5355	0.9112 103.34 0.5383	0.9159 103.87 0.5410	0.9203 104.37 0.5436	0.9245 104.85 0.5461	0.9286 105.32 0.5486	
25.6 46.38 54.000					0.8988 101.93 0.5310	0.9039 102.51 0.5340	0.9088 103.07 0.5369	0.9135 103.60 0.5397	0.9180 104.11 0.5423	0.9223 104.60 0.5448	0.9265 105.07 0.5473	
25.7 46.26 55.106					0.8961 101.63 0.5294	0.9014 102.23 0.5325	0.9064 102.79 0.5354	0.9111 103.33 0.5382	0.9157 103.85 0.5409	0.9201 104.34 0.5435	0.9243 104.82 0.5460	
25.8 46.44 56.227					0.8935 101.32 0.5278	0.8989 101.94 0.5310	0.9039 102.51 0.5340	0.9087 103.06 0.5368	0.9134 103.58 0.5396	0.9178 104.09 0.5422	0.9221 104.57 0.5447	
25.9 46.62 57.364					0.8908 101.02 0.5262	0.8962 101.63 0.5294	0.9014 102.23 0.5325	0.9063 102.78 0.5354	0.9110 103.31 0.5382	0.9155 103.83 0.5408	0.9199 104.32 0.5434	
26.0 46.80 58.517					0.8880 100.71 0.5246	0.8935 101.33 0.5273	0.8989 101.94 0.5310	0.9039 102.50 0.5339	0.9086 103.05 0.5368	0.9132 103.57 0.5395	0.9176 104.07 0.5421	
26.1 46.98 59.696					0.8853 100.39 0.5230	0.8909 101.03 0.5263	0.8962 101.64 0.5294	0.9014 102.22 0.5325	0.9062 102.77 0.5354	0.9109 103.30 0.5381	0.9154 103.81 0.5408	
26.2 47.16 60.872						0.8882 100.73 0.5247	0.8936 101.34 0.5279	0.8989 101.94 0.5310	0.9038 102.50 0.5339	0.9085 103.04 0.5367	0.9131 103.55 0.5394	
26.3 47.34 62.074						0.8854 100.42 0.5231	0.8910 101.05 0.5263	0.8963 101.64 0.5295	0.9014 102.22 0.5325	0.9062 102.77 0.5353	0.9108 103.29 0.5380	
26.4 47.52 63.293						0.8825 100.09 0.5214	0.8883 100.74 0.5248	0.8937 101.35 0.5280	0.8989 101.94 0.5310	0.9038 102.49 0.5339	0.9084 103.02 0.5367	
26.5 47.70 64.528						0.8797 99.77 0.5197	0.8856 100.44 0.5232	0.8911 101.06 0.5264	0.8963 101.65 0.5295	0.9013 102.22 0.5325	0.9061 102.76 0.5353	
26.6 47.88 65.790						0.8769 99.44 0.5180	0.8828 100.12 0.5215	0.8885 100.76 0.5249	0.8938 101.36 0.5280	0.8989 101.94 0.5310	0.9037 102.49 0.5339	
26.7 48.06 67.050						0.8740 99.12 0.5163	0.8800 99.80 0.5199	0.8858 100.46 0.5233	0.8912 101.07 0.5265	0.8964 101.65 0.5295	0.9013 102.22 0.5324	
26.8 48.24 68.336						0.8710 98.78 0.5146	0.8772 99.48 0.5182	0.8831 100.15 0.5217	0.8886 100.78 0.5249	0.8939 101.37 0.5280	0.8989 101.94 0.5310	
26.9 48.42 69.639						0.8679 98.43 0.5127	0.8743 99.16 0.5165	0.8803 99.83 0.5200	0.8860 100.48 0.5234	0.8913 101.08 0.5265	0.8964 101.66 0.5295	
27.0 48.60 70.960						0.8649 98.09 0.5109	0.8714 98.83 0.5148	0.8775 99.52 0.5184	0.8833 100.18 0.5218	0.8888 100.79 0.5250	0.8939 101.38 0.5281	
27.1 48.78 72.298						0.8618 97.73 0.5091	0.8684 98.49 0.5130	0.8747 99.20 0.5167	0.8806 99.86 0.5202	0.8862 100.50 0.5235	0.8914 101.09 0.5266	
27.2 48.96 73.654						0.8586 97.38 0.5072	0.8654 98.15 0.5112	0.8719 98.87 0.5150	0.8778 99.55 0.5186	0.8835 100.20 0.5219	0.8889 100.81 0.5251	
27.3 49.14 75.027						0.8554 97.01 0.5053	0.8624 97.80 0.5094	0.8690 98.55 0.5133	0.8751 99.24 0.5169	0.8808 99.89 0.5203	0.8863 100.52 0.5236	
27.4 49.32 76.418						0.8519 96.62 0.5033	0.8593 97.45 0.5076	0.8659 98.21 0.5116	0.8722 98.92 0.5153	0.8781 99.58 0.5187	0.8837 100.22 0.5221	

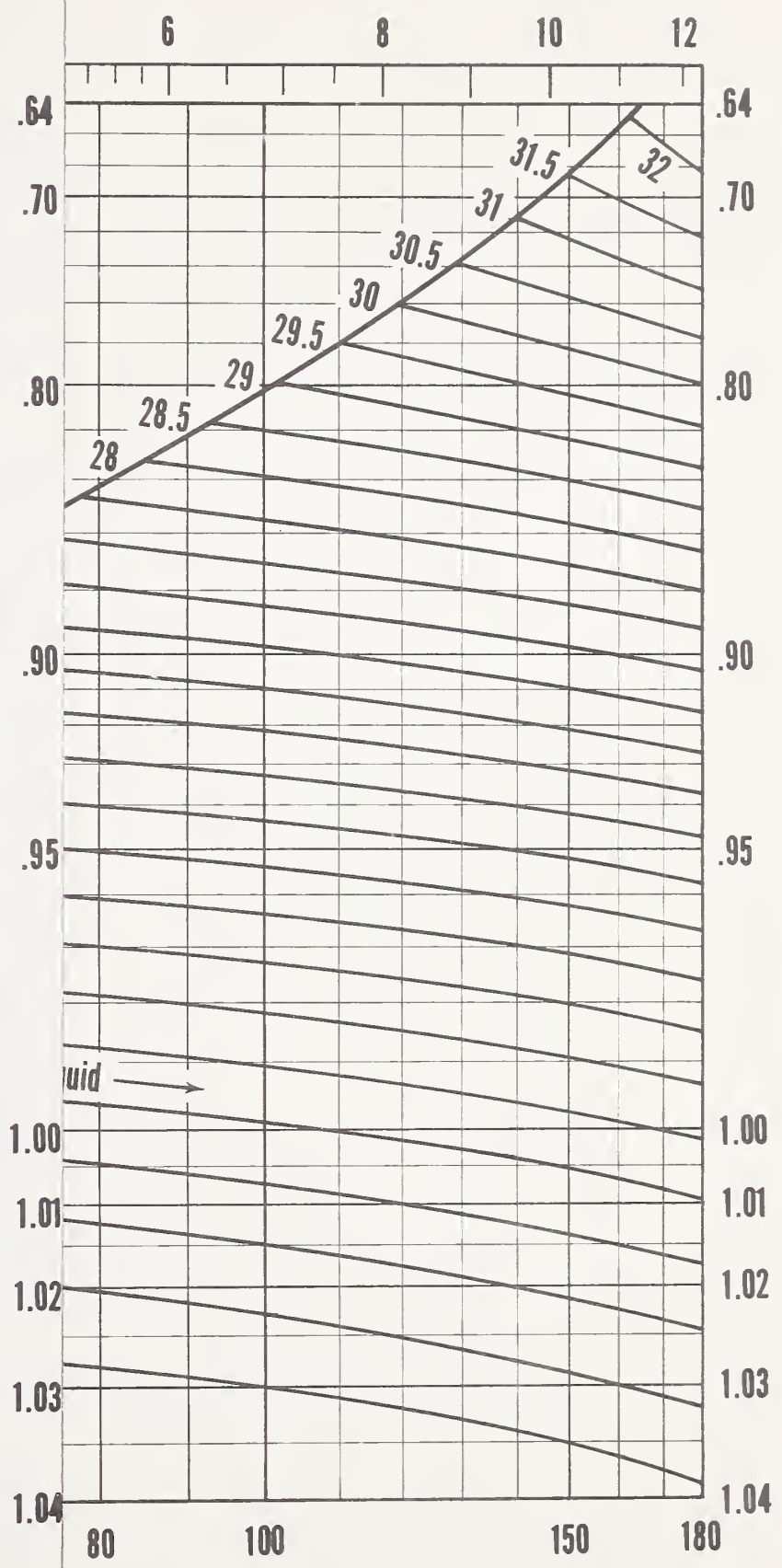
1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA			TABLE ENTRIES									
			1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL									
PSIA	12.000	14.696	20.000	40.000	60.000	80.000	100.000	120.000	140.000	160.000	180.000	
ATM.	0.817	1.000	1.361	2.722	4.083	5.444	6.805	8.165	9.526	10.887	12.248	
27.5						0.8486	0.8561	0.8630	0.8694	0.8754	0.8811	
49.50						96.24	97.09	97.87	98.59	99.27	99.92	
77.928						0.5013	0.5058	0.5098	0.5136	0.5171	0.5205	
27.6						0.8452	0.8528	0.8599	0.8664	0.8726	0.8784	
49.68						95.85	96.71	97.52	98.26	98.96	99.62	
79.255						0.4993	0.5038	0.5080	0.5118	0.5155	0.5189	
27.7							0.8495	0.8568	0.8635	0.8698	0.8757	
49.86							96.34	97.17	97.93	98.64	99.31	
80.731							0.5018	0.5062	0.5101	0.5138	0.5173	
27.8							0.8462	0.8536	0.8605	0.8669	0.8730	
50.04							95.96	96.80	97.59	98.32	99.00	
82.165							0.4999	0.5042	0.5083	0.5121	0.5157	
27.9							0.8428	0.8504	0.8575	0.8640	0.8702	
50.22							95.58	96.44	97.25	97.99	98.69	
83.647							0.4979	0.5023	0.5066	0.5104	0.5141	
28.0							0.8393	0.8471	0.8543	0.8611	0.8674	
50.40							95.18	96.07	96.89	97.66	98.37	
85.148							0.4958	0.5004	0.5047	0.5087	0.5124	
28.1							0.8357	0.8438	0.8512	0.8581	0.8646	
50.58							94.78	95.69	96.53	97.32	98.05	
86.668							0.4937	0.4985	0.5028	0.5069	0.5107	
28.2							0.8321	0.8404	0.8480	0.8551	0.8617	
50.76							94.37	95.31	96.17	96.98	97.72	
88.206							0.4916	0.4965	0.5010	0.5051	0.5090	
28.3							0.8284	0.8369	0.8448	0.8520	0.8588	
50.94							93.95	94.92	95.81	96.62	97.39	
89.764							0.4894	0.4944	0.4991	0.5033	0.5073	
28.4							0.8245	0.8334	0.8415	0.8489	0.8558	
51.12							93.51	94.52	95.43	96.27	97.05	
91.341							0.4871	0.4923	0.4971	0.5015	0.5056	
28.5							0.8207	0.8298	0.8381	0.8457	0.8528	
51.30							93.07	94.11	95.05	95.91	96.71	
92.937							0.4848	0.4902	0.4951	0.4996	0.5038	
28.6							0.8167	0.8262	0.8347	0.8425	0.8497	
51.48							92.62	93.70	94.66	95.55	96.36	
94.552							0.4824	0.4881	0.4931	0.4977	0.5020	
28.7							0.8126	0.8224	0.8312	0.8392	0.8466	
51.66							92.16	93.26	94.27	95.17	96.01	
96.187							0.4800	0.4858	0.4910	0.4958	0.5001	
28.8							0.8084	0.8185	0.8277	0.8359	0.8435	
51.84							91.68	92.83	93.86	94.79	95.66	
97.842							0.4775	0.4835	0.4889	0.4938	0.4983	
28.9							0.8041	0.8146	0.8240	0.8325	0.8403	
52.02							91.19	92.38	93.44	94.41	95.29	
99.516							0.4750	0.4812	0.4867	0.4918	0.4964	
29.0								0.8105	0.8203	0.8290	0.8370	
52.20								91.92	93.02	94.02	94.92	
101.210								0.4788	0.4846	0.4897	0.4945	
29.1								0.8064	0.8165	0.8255	0.8337	
52.38								91.45	92.59	93.61	94.55	
102.925								0.4764	0.4823	0.4876	0.4925	
29.2								0.8022	0.8126	0.8219	0.8303	
52.56								90.97	92.16	93.21	94.17	
104.659								0.4739	0.4800	0.4855	0.4905	
29.3								0.7978	0.8096	0.8182	0.8269	
52.74								90.48	91.70	92.79	93.78	
106.415								0.4713	0.4777	0.4834	0.4885	
29.4								0.7932	0.8055	0.8145	0.8234	
52.92								89.96	91.24	92.37	93.38	
108.191								0.4686	0.4753	0.4811	0.4864	

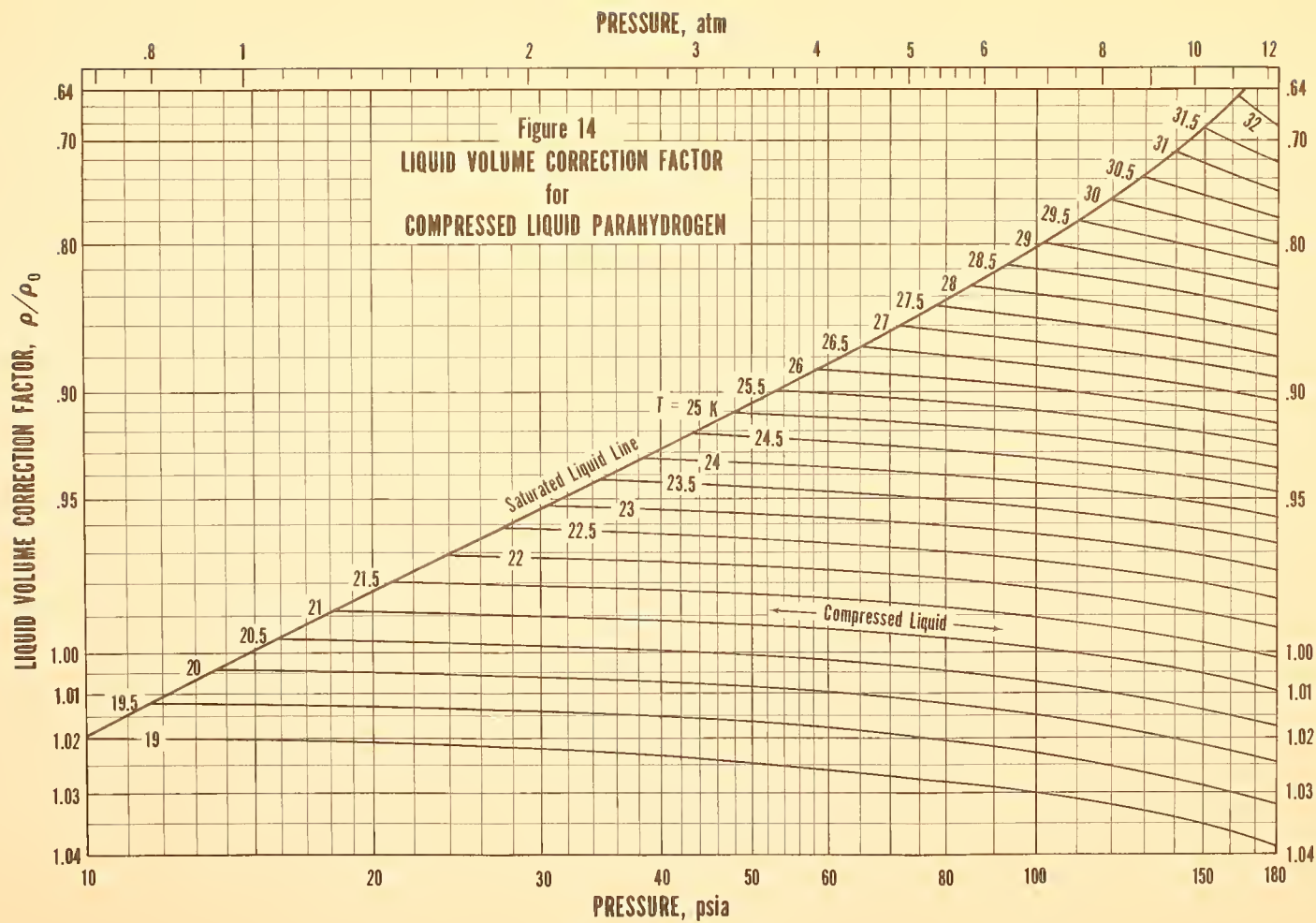
1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA			TABLE ENTRIES										
			1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70 °F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL										
PSIA	12.000	14.696	20.000	40.000	60.000	80.000	100.000	120.000	140.000	160.000	180.000		
ATM.	0.817	1.000	1.361	2.722	4.083	5.444	6.805	8.165	9.526	10.887	12.248		
29.5								0.7886	0.8004	0.8106	0.8199		
53.10								89.43	90.77	91.93	92.98		
109.988								0.4658	0.4728	0.4789	0.4843		
29.6								0.7837	0.7960	0.8067	0.8162		
53.28								88.88	90.28	91.49	92.57		
111.806								0.4630	0.4703	0.4766	0.4822		
29.7								0.7788	0.7916	0.8027	0.8126		
53.46								88.32	89.78	91.03	92.15		
113.646								0.4600	0.4676	0.4742	0.4800		
29.8								0.7736	0.7871	0.7986	0.8088		
53.64								87.73	89.26	90.57	91.72		
115.508								0.4570	0.4649	0.4718	0.4778		
29.9								0.7682	0.7824	0.7944	0.8049		
53.82								87.12	88.73	90.09	91.28		
117.391								0.4538	0.4622	0.4693	0.4755		
30.0								0.7626	0.7775	0.7901	0.8010		
54.00								86.48	88.18	89.60	90.84		
119.297								0.4505	0.4593	0.4667	0.4732		
30.1									0.7725	0.7856	0.7969		
54.18									87.60	89.09	90.38		
121.225									0.4563	0.4641	0.4708		
30.2									0.7673	0.7811	0.7928		
54.36									87.02	88.58	89.91		
123.176									0.4533	0.4614	0.4683		
30.3									0.7619	0.7763	0.7886		
54.54									86.40	88.04	89.43		
125.150									0.4501	0.4586	0.4658		
30.4									0.7562	0.7715	0.7842		
54.72									85.76	87.49	88.94		
127.146									0.4467	0.4557	0.4633		
30.5									0.7505	0.7665	0.7798		
54.90									85.11	86.92	88.43		
129.166									0.4433	0.4528	0.4607		
30.6									0.7442	0.7612	0.7752		
55.08									84.40	86.33	87.91		
131.210									0.4396	0.4497	0.4579		
30.7									0.7378	0.7558	0.7705		
55.26									83.67	85.72	87.38		
133.277									0.4358	0.4465	0.4552		
30.8									0.7308	0.7503	0.7656		
55.44									82.88	85.09	86.83		
135.368									0.4317	0.4432	0.4523		
30.9									0.7235	0.7444	0.7606		
55.62									82.05	84.42	86.26		
137.482									0.4274	0.4397	0.4493		
31.0									0.7154	0.7383	0.7554		
55.80									81.13	83.73	85.67		
139.621									0.4226	0.4361	0.4463		
31.1										0.7318	0.7501		
55.98										82.99	85.07		
141.735										0.4323	0.4431		
31.2										0.7250	0.7445		
56.16										82.22	84.43		
143.973										0.4283	0.4398		
31.3										0.7177	0.7387		
56.34										81.39	83.78		
146.187										0.4240	0.4364		
31.4										0.7102	0.7326		
56.52										80.55	83.09		
148.425										0.4196	0.4328		

1. TEMPERATURE, K 2. TEMPERATURE, R 3. VAPOR PRESSURE, PSIA				TABLE ENTRIES 1. LIQUID VOLUME CORRECTION FACTOR, DIMENSIONLESS 2. NTP (70°F) VOLUME CORRECTION FACTOR, FT ³ /GAL 3. DENSITY, LB/GAL								
PSIA	12.000	14.696	20.000	40.000	60.000	80.000	100.000	120.000	140.000	160.000	180.000	
ATM.	0.817	1.000	1.361	2.722	4.083	5.444	6.805	8.165	9.526	10.887	12.248	
31.5 56.70 150.590										0.7018 79.59 0.4146	0.7262 82.36 0.4290	
31.6 56.88 152.980										0.6929 78.58 0.4093	0.7196 81.61 0.4251	
31.7 57.06 155.297										0.6830 77.46 0.4035	0.7125 80.80 0.4209	
31.8 57.24 157.641										0.6716 76.16 0.3967	0.7052 79.97 0.4166	
31.9 57.42 160.012											0.6973 79.07 0.4119	
32.0 57.60 162.411											0.6886 78.09 0.4068	



LIQUID VOLUME CORRECTION FACTOR, ρ/ρ_0





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APPENDIX

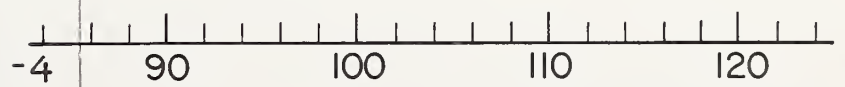
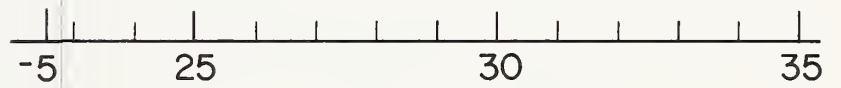
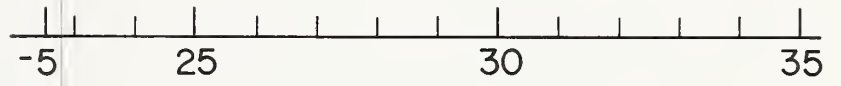
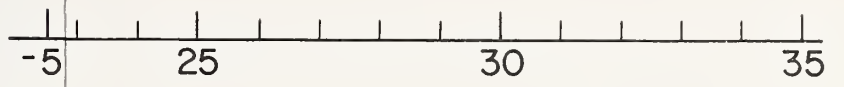
Units and Conversions

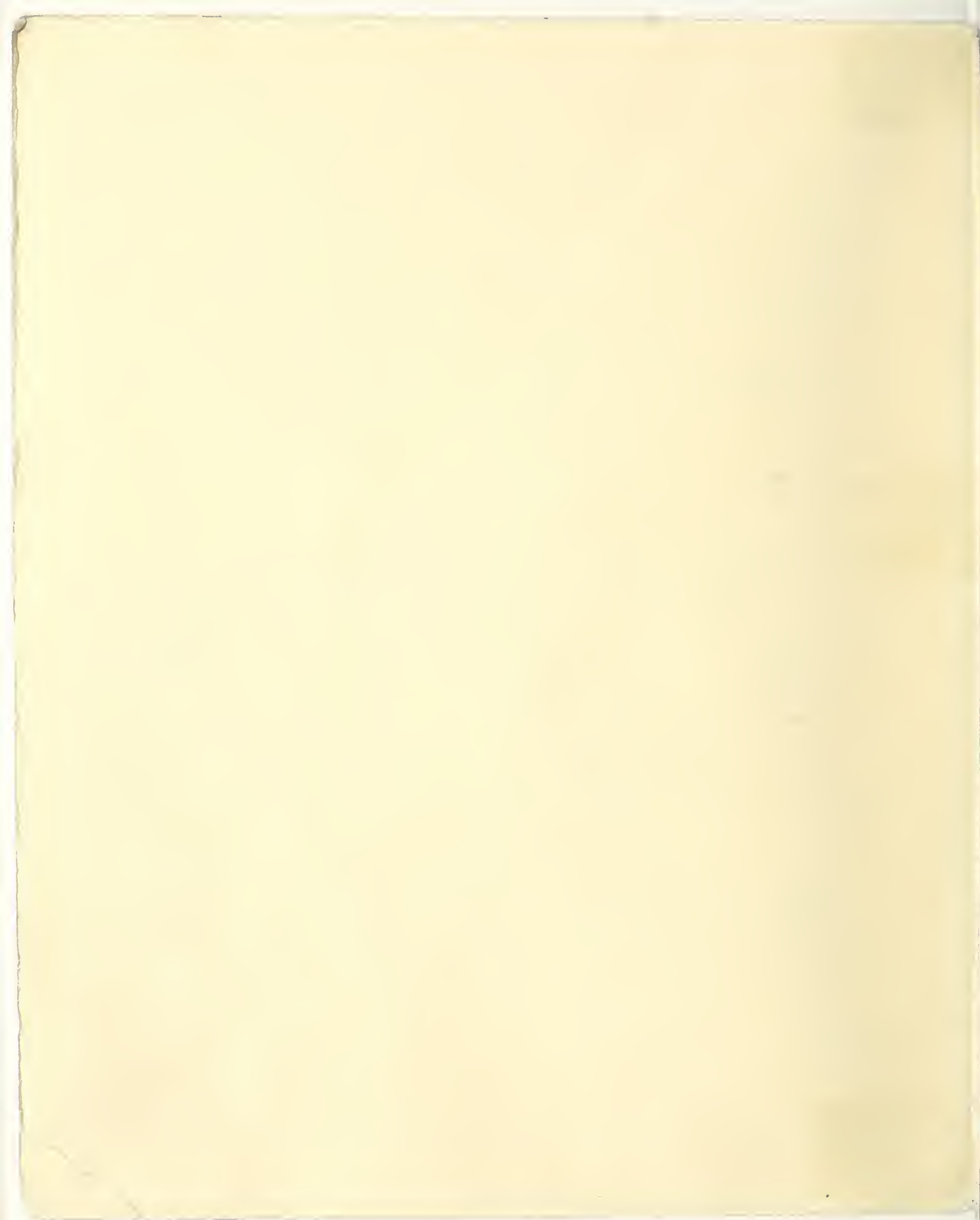
The calculations for all fluids were performed with equations whose units were atmospheres, degrees Kelvin, and molar volumes. The various units presented in the tables involved the following conversion factors (IUPAC 1961 and Mechtly 1969):

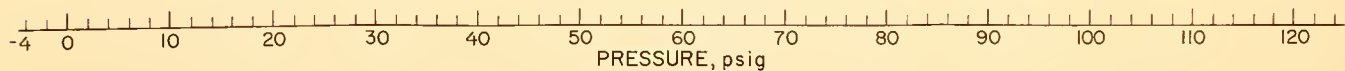
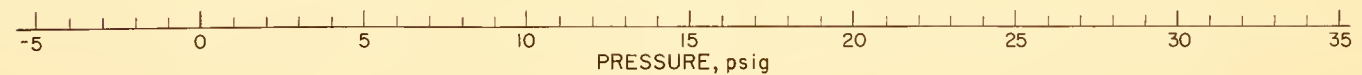
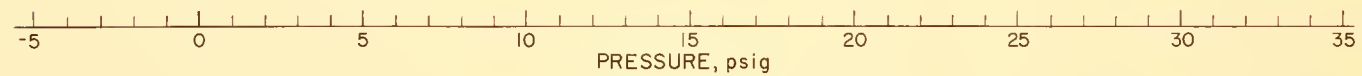
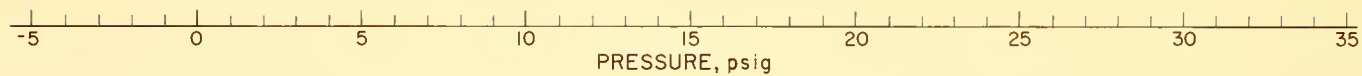
Molecular Weight			
Parahydrogen	2.01594	14.696 psia	= 1 atmosphere
Oxygen	31.9988	1.8 degrees R	= 1 degree K
Nitrogen	28.016	1000.0 cm ³	= 1 liter
Argon	39.948	28.316847 liters	= 1 ft ³
		3.7854118 liters	= 1 gal
		453.59237 g	= 1 lb

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This work although financed primarily with NBS funds is a "spin-off" from the Cryogenics Data Center's data compilation program largely supported by NASA-SNPO (Contract R-45) and OART (Contract R-46) and more recently by NASA Houston (Contract T-1813A).









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16. ABSTRACT (A 200-word or less factual summary of most significant information. If document includes a significant bibliography or literature survey, mention it here.) Tables of pressure, volume, density and temperature for the saturated liquid and for compressed liquid states from the triple point to the critical point, of oxygen, nitrogen, argon, and parahydrogen are presented. The table entries of temperature are in Kelvin and Rankine, table entries in pressure are in atmospheres and psia. Volumes or densities are given in several different units, and density ratios or "volume correction factors" are tabulated for each entry. Estimates of the uncertainty for the tabulated data are given. The tables and graphs were prepared in the style and in the units preferred by users. They are intended as source for both technician and engineer.			
17. KEY WORDS (Alphabetical order, separated by semicolons) Argon; compressed liquid; density; graphs; liquid; nitrogen; oxygen; parahydrogen; pressure; saturated liquid; tables; temperature; uncertainties; volume; volume correction factor.			
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